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Output Down to Figure of Year Ago

Highest production in 1931, week ending Aug. 8, average daily output 2,551,807 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Production Situation at a Stage Which Promises Better Prices and Resumption of Drilling

By James McIntyre

Lowest daily average crude oil production in the United States during 1931 was for week ending Sept. 5 with average output of 1,736,007 bbls.

The average daily production of crude oil in the past week was very close to the low mark it registered in the corresponding week last year. Only 183 bbls. divide the two records, but the production situation is better in hand now than it was a year ago when from the end of January to the end of April production was permitted to mount from 2,080,000 bbls. to 2,490,000 bbls. per day, due to lack of restrictions in East Texas.

In Oklahoma and Kansas production and demand is on about an even keel. About 4,900 bbls. per day of crude oil is going into storage. This is more than offset by the fact that about 15,000 bbls. a day is coming out of storage in the East Texas Field.

It is unlikely that production will be permitted to get out of hand again this winter or coming spring, although there are some rumblings in East Texas among producers who hold that there should be a reward in the form of better crude prices for the cooperation they have shown in obedience to orders from time to time to cut down the production per well in that area. These operators evidently have forgotten that a few months ago when production was unrestricted they were forced to give from 6 to 15 bbls. of oil for the price they get for one barrel today.

However, the production situation is at that stage which warrants the presumption on the part of producers that a little later in the year they will receive a material increase for their oil. It is also at that stage when individual crude requirements will soon force a resumption of drilling in fields where production is assured.

There were more wells abandoned than wells drilled last year. The lay off in field work has lasted longer than any similar cessation of work has ever done in the history of oil, and while it has accomplished its purpose it has already left some of the larger oil companies with less visible production than they care to contemplate, and some of them are itching to put tools to work.

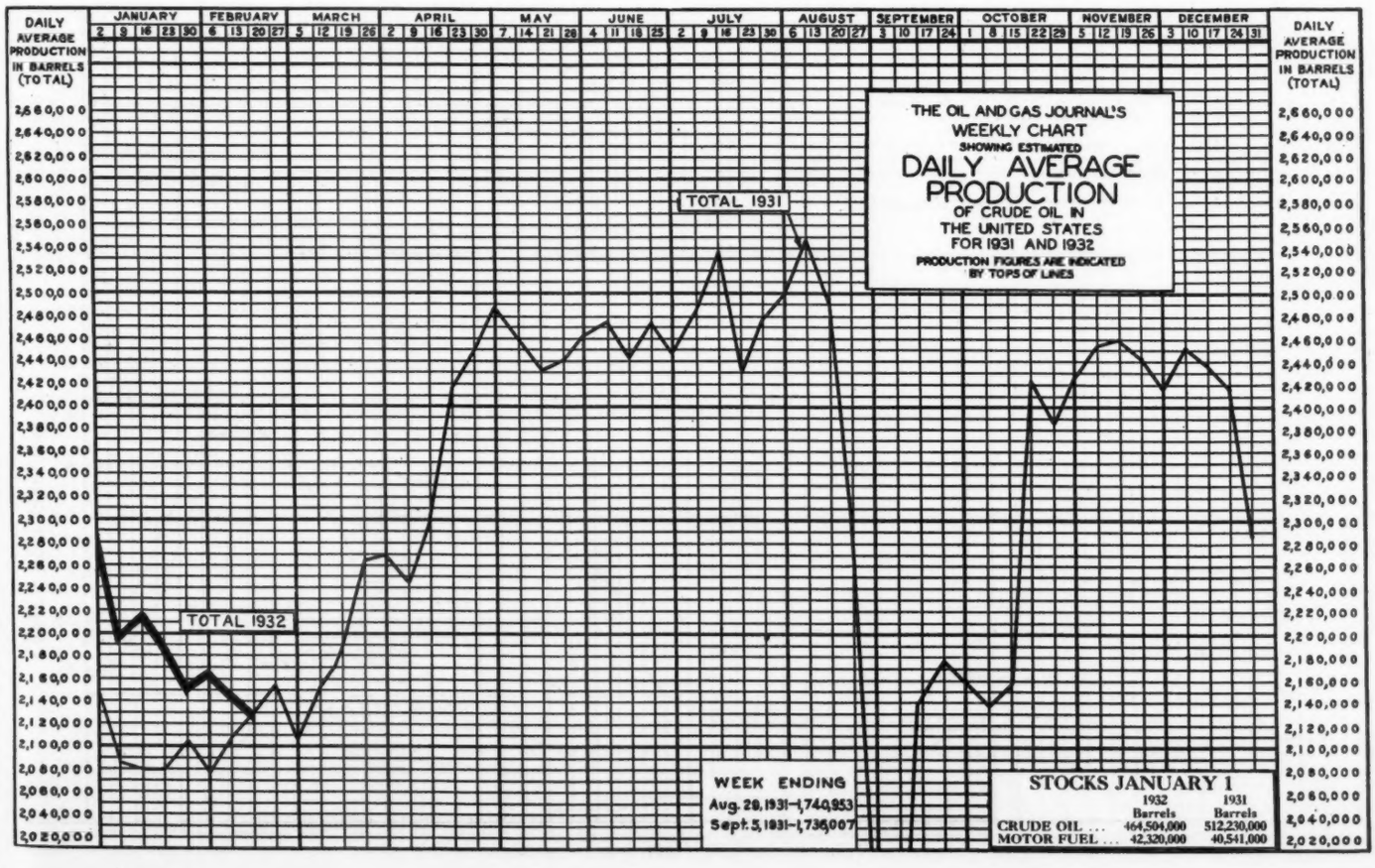
The most important news from the East Texas area this week is the fact that the south end of the field was extended one and one-half miles, the extension well showing a production of 100 bbls. in an hour's test.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ending February 13, and a comparison with the previous week follows:

	Feb. 13	Feb. 6
Oklahoma—		
Oklahoma City	81,200	77,965
Seminole-St. Louis	120,025	114,530
Remainder of State	203,125	203,115
Total Oklahoma	404,350	395,610
East Texas—		
Kilgore	103,509	110,457
Lathrop	114,945	122,389
Joiner	109,062	116,234
Total East Texas	327,516	349,080
West Texas	173,237	176,686
North Central Texas	72,355	73,635
Texas Panhandle	48,794	50,363
East Central Texas	50,310	49,590
Gulf Coast-Texas	105,244	108,255
Southwest Texas	59,561	57,510
Total State of Texas	837,017	865,119
North Louisiana	28,725	28,345
Gulf Coast-Louisiana	28,295	29,945
Arkansas	33,535	33,505
Kansas	98,650	97,815
Eastern	118,000	118,000
Rocky Mountain area	81,869	80,906
California—		
Santa Fe Springs	66,500	66,000
Long Beach	76,750	77,000
Playa Del Rey	20,750	21,000
Elwood	17,000	16,500
Kettleman Hills	59,250	61,000
Remainder of State	259,750	257,500
Total California	500,000	499,000
Total United States	2,130,441	2,148,245

→ Decrease 17,804 Bbls. Daily ←



Believe Gasoline Quotations on Bottom

Majority of Trade Confident That Low Has Been Reached in Refinery and Natural Grades. Need of Reduced Plant Operations

By C. O. Willson

Most market observers in Oklahoma (Group 3) the first of the week were predicting that prices on refinery gasolines and natural gasolines were on bottom. No speedy recovery was being forecast by these observers but it was thought that the next turn would be upward with few predictions as to when this improvement would start.

The latter part of last week, spot buying of refinery gasolines was more active and there was one-eighth cent advance in the low octane grade of U. S. Motor gasoline so that the product was selling to the trade at a spread of 2⅞ to 3⅛ cents. Buying on Monday and Tuesday was not so active but prices continued steady. The 26-70 grade of natural gasoline dropped to a low of 1⅜ cents in both Oklahoma and Texas last week and this price was being maintained the first of this week. There was additional buying at this level for shipment to the coast.

The attitude of the trade is that the slow buying of gasolines probably will continue over the remainder of February. This will mean the usual additions to storage but it is hoped that the market will not become top heavy again due to this situation and prices will remain steady until the spring demand furnishes additional outlets.

Largely, the same situation obtains in the rest of the market. Prices for the most part are steady with many sellers in a position to take care of additional business should it develop over the remainder of the month. U.G.I. gas oils continue to be a drug on the market and prices on this grade and cracking stock have been reduced to a low of 1 cent a gallon. Some high cold test material is reported to have been offered as low as three-fourth cent per gallon. Despite this continued weakness in gas oils, the heavy industrial grades of fuel oils were stronger the past week than they were earlier in the month and late in January. The lowest price on the low gravity industrial fuels has advanced from 20 to 22½ cents again and the other grades are firmer. Railroad purchases on contracts and some local industrial and public utility buying accounts for the improvement in fuels. The extremely high cold test fuels remain weak.

REFINED MARKET BAROMETER

With the demand at the low point of the year, weakness was apparent in gasoline tank car markets in several refining areas during the past week. The high antiknock gasolines are in a better position than the low octane grades. Natural gasoline prices were lower both in California and the Mid-Continent. No important gasoline export business developed. Kerosenes are easier than they were a month ago but for the most part refinery prices are being maintained. The gas oil market is generally slow with no important changes reported in fuel oils. Lubricants were more active in the East where prices on some grades of neutral oils and cylinder stocks were slightly higher. Steady demand for furnace oils. Wax prices unchanged.

Mid-Continent—Few price changes reported. Refinery gasolines and natural gasolines not active but quotations believed to be on bottom. Kerosene and tractor fuel steady. Gas oil weak. No changes in fuels.

East Coast—Better demand for lubricating oils. Demand for gasoline centers in high octane material. Kerosene slow. No change in bunker fuel oil. Gas oil slow. Better domestic demand for wax.

Pennsylvania—Better tone to bright stock and steam refined stock markets. Gasoline slow. Lower prices on some grades of kerosene. Wax unchanged.

Chicago—Gasoline prices lower. Kerosene less active. More furnace oil offered by sellers.

Gulf Coast—Market generally inactive. Gasoline weak. Distress sales of pale and red neutrals.

California—Gasoline prices for domestic movement lower. Fuels steady.

MID-CONTINENT REFINERY OPERATIONS (Data in barrels)

Areas—	Week endmg Feb. 6, 1932 — Daily crude runs to stills	Gasoline stocks	Week ending Feb. 7, 1931 — Daily crude runs to stills	Gasoline stocks
Oklahoma, Kansas, Missouri	206,900	3,560,000	236,900	2,921,000
Inland Texas	109,300	1,866,000	106,600	1,014,000
North Louisiana and Arkansas	47,700	156,000	37,400	196,000
Total	363,900	5,582,000	380,700	4,131,000

Note—Based on weekly reports of American Petroleum Institute.

Reduced Operations Needed

Students of market conditions continue to point to current statistical data in support of their contention that a substantial reduction in Mid-Continent refinery operation is highly desirable to assure an improved market with the start of the gasoline consuming season next month. The contention is based on the American Petroleum Institute's reports which show that gasoline stocks at Mid-Continent refineries on February 6 were 1,451,000 bbls., or 35 per cent greater than on the same date last year. The comparative situation by refinery groups is shown in the accompanying table.

For the country as a whole, including the Mid-Continent, gasoline stocks at refineries are slightly less now than they were a year ago. California stocks are 2,000,000 bbls. less and the East Coast 1,800,000 bbls. less. The greatest increases are in the inland areas not only in the Mid-Continent but other points.

A study of the statistical data shows that the large increase in Mid-Continent stocks is due to decreased shipments rather than increased output. Crude oil runs to stills at present are slightly less than they were a year ago and that situation is representative of conditions over the greater part of the past year. On the demand side it is apparent that competitive areas have been able to obtain and hold a part of the gasoline business which in previous years went to the Mid-Continent refiners. This is particularly true in the Middle West where new

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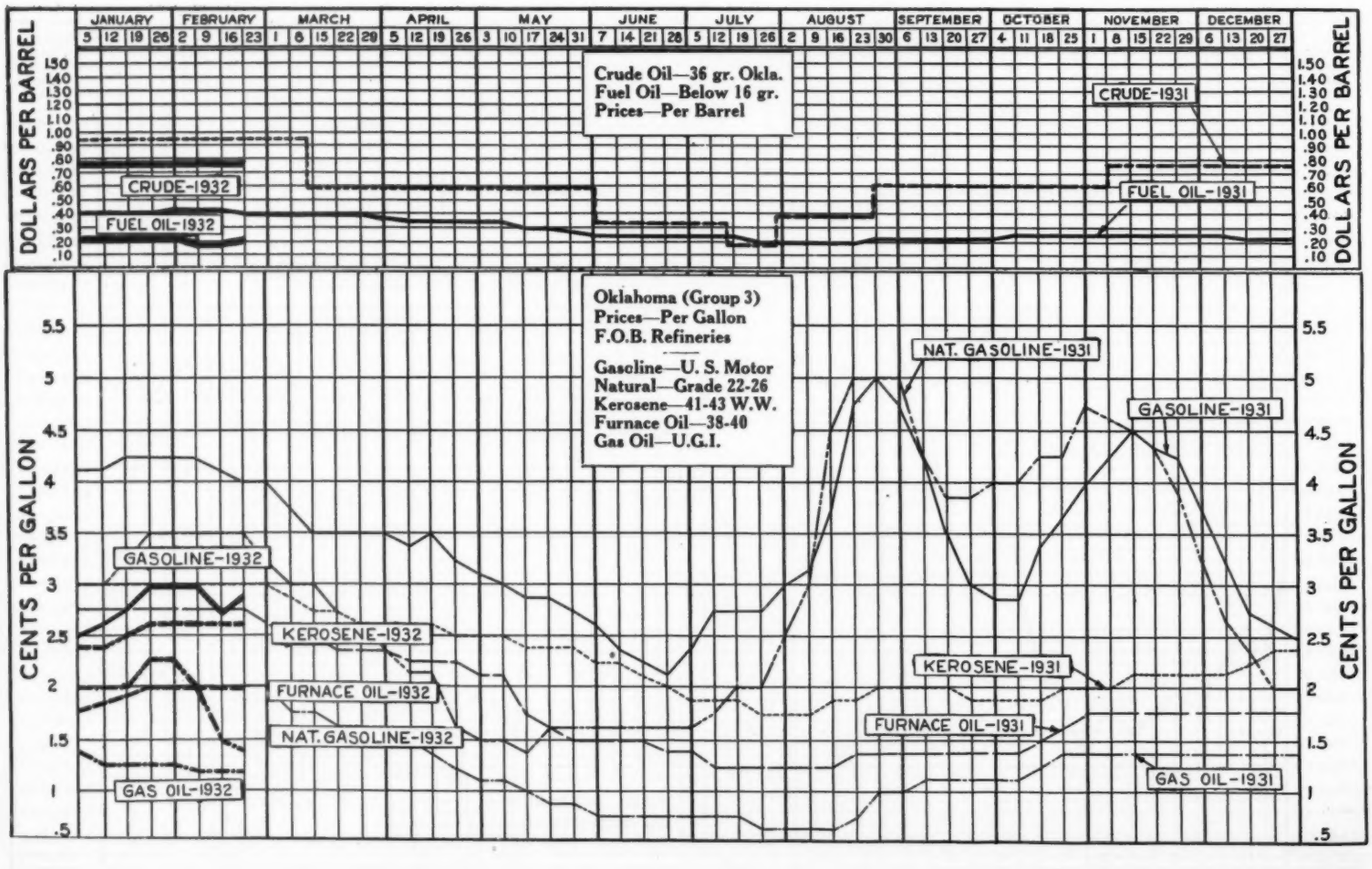

Tentative Rules for East Texas Field

Texas Railroad Commission Proposes Ways of Operating the Field Economically, and Meets With No Objections

By Raymond Brooks

AUSTIN, Tex., Feb. 15.—The Railroad Commission heard testimony Friday that the 75-bbl. limit on East Texas oil wells is satisfactory to 95 per cent of the operators, and proposed conservation rules that failed to arouse objection, as it conducted a hearing to restore proration and conservation of the field when martial law is lifted.

The tentative rules it submitted fix a gas-oil ratio of 500 feet of gas per barrel of oil, and allows the burning of gas in flares; limits tubing of wells to 2½ inches; fixes 660-foot distances between wells, and adopts a 20-acre unit as the basis for new drilling permits. It prohibits use of gas or air lift, except on special permit, and would keep the production of all wells within 10 feet of the water table at not over 20 bbls. per hour.

J. K. Wells, Tyler operator, told the commission the 75-bbl. limit now applied under martial law is generally satisfactory, but the small operators could not pay out on a lower allowable.

W. A. Wise, Tyler, wanted to know whether the Railroad Commission will "keep the soldiers" in the field, to which Chairman C. V. Terrell replied that was a question for the governor and not the commission.

E. V. Foran, petroleum engineer, displayed charts of the field and testified that the mean pressure of the field is declining 8 pounds per month. He said orderly withdrawal of oil is imperative to the security of the field.

Maj. J. R. Parten, president of the Woodley Petroleum Co., talked briefly of the conservation rules.

All the strife of a year ago, when oil was sliding down to 10 cents a barrel, was absent and the hearing was harmonious. Chairman Terrell had to ask several times before he could get any expression as to the proration feature, and no objections were offered to the 75-bbl. limit.

Brig. Gen. Jacob F. Wolters, martial law commander, who had said withdrawal now of all the troops from the oil field would be "an economic disaster that would be felt all over the nation," was present but took no part in the hearing.

The proposed orders were taken under advisement, without indication whether the conservation rules will be applied separately before the indicated 75-bbl. proration order is made effective at the end of martial law regulation of the well production of the field.

Myron G. Blalock, Marshall, attorney for some of the operators, said the 75-bbl. limit was satisfactory, so long as proration was kept on the per well basis. "That is the only basis under which the little fellow can be protected," he told the commission.

During the day, the entire transcript of the testimony taken at the commission's last hearing on the East Texas Field was introduced in evidence for this hearing, and made a part of its record.

Text of Tentative Rules

Following is the full text of the tentative rules for conservation in the field, as read to the oil men at the hearing:

1. Spacing of wells shall be as follows: 660 feet from the nearest drilling or producing well and not less than 330 feet from the nearest property line. Not more than one well shall be drilled to each 20 acres of surface ownership. Twenty-acre units shall have a length of not more than twice the breadth. No lease, or property shall be divided in such manner as to create more than one fractional unit. Each fractional unit shall be treated as a full unit. Exceptions to this rule may be granted by the Railroad Commission.

2. A minimum 100 feet of surface casing shall be run and cemented with at least 30 sacks of quick-set cement for 10-inch and 50 sacks for 12½-inch. Cement shall be allowed to set a minimum of 12 hours before drilling plug.

3. New, or reconditioned casing that has been tested to 800 pounds per square inch before running, shall set six hours after bailing 2,000 feet and before drilling plug. Reconditioned casing that has not been tested before running shall set 12 hours after bailing to 2,000 feet and before drilling plug. In both cases, after setting the specified time, if the fluid level shows a raise of 25 feet or more, the well shall be caused to stand a second period of equal time. If, after the second period of equal time, the fluid level shows a rise the casing shall be condemned. After the corrective operations the casing shall again be tested in the same manner. Operators shall obtain casing clearance permit from Railroad Commission agent before drilling plug. Casing may be tested by pump pressure providing the mud-laden fluid in the hole is replaced by clear water and pump pressure of at least 600 pounds per square inch applied. If at the end of 30 minutes pressure shows a drop of 50 pounds, or more, the casing shall be condemned. Christmas tree fittings, or well head connections, shall be tested to at least 600 pounds per square inch. Each operator shall fill in blanks on Form 2, giving the method of testing and sign an affidavit that the test has been made.

If Railroad Commission agent is not available for inspection the operator shall have the test witnessed, preferably by an offset operator. Affidavit of test, on form prescribed by Railroad Commission, signed by operator and witnessing operator, shall be given to Railroad Commission agent. If test is satisfactory, a casing clearance permit will be issued by the Railroad Commission agent.

Well Equipment

4. Any well showing pressure on the bradenhead, or leaking gas or oil between the surface casing and the oil string shall be tested in the following manner: The well shall be killed with water and pump pressure applied through the tubing head. Should the pressure gauge on the bradenhead reflect the applied pressure, the casing shall be condemned and a new oil string shall be run and cemented.

5. All wells shall be equipped with a bradenhead with a working pressure of not less than 600 pounds per square inch. Bradenheads shall not be welded. All bradenheads shall be equipped with pipe connections and globe valve accessible at surface. No cement shall be pumped between oil string and surface casing.

6. The producing string of casing in each well must be cemented by pump and plug method.

7. A blowout preventer in good condition and working order shall be installed on each well before drilling cement plug, coring pay or completing well.

8. All wooden derricks shall be properly guyed and all sills, except framing sills, removed. Well head connections shall be protected by a wooden shed constructed of at least 3-inch material.

Production Methods

9. All flowing wells must be produced through a separator, or gun barrel of ample capacity and in good working order.

10. All casinghead gas, which cannot be utilized without violating the rules and regulations of the Texas Railroad Commission, shall be piped to a point at least 150 feet from any producing well, stock tank, or other fire hazards and burned. All vent lines shall be equipped with back pressure valves. This rule applies to all gas from traps and flow tanks. Gas used from stock tanks, if burned, must

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Sharkey Law Is Only Tangible Hope

E. B. Reeser So Reports to Governor of California Following Study of Situation There

SACRAMENTO, Calif., Feb. 15.—Declaring the Sharkey bill "is the only tangible hope of stopping the drift of the California oil industry toward disintegration," E. B. Reeser, of Tulsa, president of the Barnsdall Corp., and former president of the American Petroleum Institute, has submitted the results of a survey of the State's oil industry to Governor James Rolph.

The governor named Mr. Reeser to make the survey for information bearing on the referendum vote to be held at the May primary election. The bill would authorize a commission named by the industry to prescribe curtailment of oil production by means of field proration.

Mr. Reeser's report follows:

Honorable James Rolph, Jr., Governor of California, Sacramento, Calif.

Dear Governor:

In accordance with your request, I have made a survey of the petroleum industry in the State of California and herewith submit my views on the more important phases of the situation.

Production

Petroleum is one of the greatest of the world's industries, and the largest and most important industry in the State of California. Cheap heat and power are necessary to insure prosperity and comfort to any community. Because of long distances to commercial coal fields, California must rely to a large extent on its oil and gas reserves. Petroleum and natural gas on a reasonable price basis are essential to the prosperity of California. It is, therefore, in the public interest to use every reasonable measure to prevent the waste of these reserves.

May I direct your attention to the fact that there is no analogy between petroleum and natural gas and natural products of the soil. We are dealing with an irreplaceable rather than a crop product. Laws may be entirely adequate to protect the interests of the State and its people in other industries, which utterly fail to protect those engaged in the petroleum industry, or the public interest.

For several years the State of California, and indeed the entire world, has suffered from an overproduction of petroleum. This has been due to several reasons, but principally to the development of machinery capable of drilling wells to great depths. During the same period refinery practices have improved, resulting in much greater yields of gasoline from each barrel of crude oil. The industry is staggering under the burden of tremendous stocks aboveground and a current daily production too great to permit of a reasonable withdrawal from the excessive stocks.

The present deplorable conditions should be corrected.

Corrective Measures

There are only two methods available. One is what is generally known as the "survival of the fittest," or perhaps it would be better to call it "the law of the jungle." We cannot believe this old theory will be acceptable. The only sound remedy is "curtailment" or "equitable proration." One of these two plans will be followed.

It is unreasonable to expect that the phenomenal success of the last few years in finding new reserves of oil will continue indefinitely. Producing acreage is limited and cannot be increased. Predictions have been made from time to time as to the extent of California's oil reserves. These estimates have usually proven to be too low. It will be admitted that every test well drilled by any company is located on what the geologists consider the most favorable location. On this theory it will be conceded that favorable indications are more difficult to find each year.

Proven reserves in the State of California at this time are approximately 4,200,000,000 bbls. of which approximately 3,800,000,000 bbls. are above 20 degrees gravity, and approximately 400,000,000 bbls. of below 20 degrees gravity oil. The 1931 demand for California crude was about 217,000,000 bbls. of which approximately 190,000,000 bbls. were of the lighter gravity oil. Assuming that the same demand will continue, without considering a reasonable increase, these estimates indicate that the present proven reserves will be exhausted in about 20 years. Consideration must be given, however, to the fact that by reason of reduced pressures and depletion it will be impracticable to continue production on the present basis for the full period of 20 years. It is probable that the present rate of production cannot be maintained for much longer than five years.

It is more than probable that reserves now unknown will be found, but as heretofore suggested, they will be more difficult to find and decidedly more expensive to develop.

Assuming that conditions are approximately as outlined, the State of California should demand the conservation of its petroleum reserves; it should enact laws giving it the authority to enforce curtailment. Conservation does not mean hoarding the product for future generations, but rather, in order to prevent waste.

Other principal oil producing states have passed laws under which production is controlled. In California voluntary proration has been carried on for some time. The plan has partly succeeded, but only by means of an inequitable burden assumed by a few companies. Men are inherently selfish. Without law and in face of forced competitive conditions, well laid plans and soundly economic programs are at the mercy of the individual. On the final analysis a few, or even one uncompromising individual, will defeat the many in a constructive effort to conserve.

Experience has proven that equitable

(Continued on Page 75)

East Texas Well Cores Tell Story

Study of Sections From Representative Wells in the Gregg and Rusk County, Texas, Areas Gives Interesting Data on Conditions

By O. L. Brace
Geologist, E. L. Smith Oil Co., Tyler, Tex.

It is probable that in the history of the oil industry, no productive oil area has been the subject of so much controversial discussion as has the East Texas Field. This has been inevitably so because of the unusual combination of rare factors which, together, have been responsible for this exceptional oil deposit. Superlatives are necessary to describe its features, its areal immensity, its thick sand section, its uniformly high initial well yield, the absence of failures. Two features alone may be cited to substantiate its claim to the title of the greatest oil field of all time: A proven productive area of approximately 100,000 acres and a record of not a single dry hole within the established productive limits.

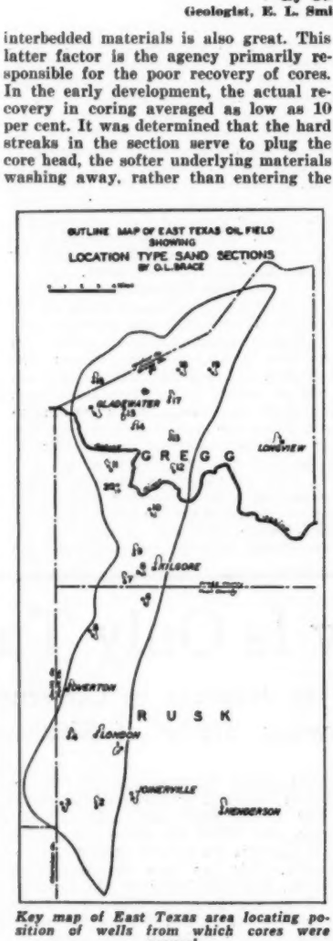
With a proven area of such extent, it is but natural that the industry should have evinced a more than ordinary desire to know something about the probable per-acre yield of the sand. In the first few months after discovery, drilling disclosed that the sandy section, from which the oil is derived, reaches a thickness of over 100 feet at the points of greatest development. Little was known about this section except that it is predominantly sandy, but the extreme thickness led some of the early writers to certain erroneous conclusions, some of which have persisted up to the present time. These conclusions have for their basis the assumption that all that is sandy in an oil-bearing section must necessarily be oil bearing. While more recent information resulting from an improvement in the technique of core taking has proven conclusively that this is not the case, there is still a tendency within the industry to disregard the facts and to overestimate the percentage of open, porous saturated sand contained within this sand section.

Past Performances Misleading

It might be said that many of the estimates so far published have been based on figures representing the past performance of the Woodbine sand in other fields, rather than an understanding of the characteristics of the Woodbine peculiar to the immediate area of the East Texas Field. It is quite obvious that to definitely establish the possibility of a given oil yield, it is first necessary to show a thickness of reservoir material, locally, sufficient to have accommodated that quantity of oil underground. Again, evidence tending to establish the thickness of such reservoir rocks can be determined only by a study of actual sands recovered in the process of coring. Attempts to classify the types of sand encountered, merely by the evidence of the bit or the core barrel in the process of cutting, lead to imaginative conclusions that have no place in technical estimates.

Stratigraphic Section

Before going into the subject of core records, it might be well to devote some space to a consideration of the difficulties of core taking, as applied to the East Texas sand section. The stratigraphic section lying between the base of the Austin chalk and the lower Cretaceous limestones, in which the productive sands occur, is formed locally by a highly complicated interbedding of sands, silty sands, ashy sands, sandy shales, shales and ash. The whole sedimentary mass might be described as a maze of overlapping lenses in which the rapid gradation from one type of material to another takes place in all directions. A sand lens of considerable thickness may develop from shale, and grade again laterally into shale in a distance of a few hundred feet. This fact is proven conclusively in a great many places between offsetting wells. The variation in the hardness between interbedded materials is also great. This latter factor is the agency primarily responsible for the poor recovery of cores. In the early development, the actual recovery in coring averaged as low as 10 per cent. It was determined that the hard streaks in the section serve to plug the core head, the softer underlying materials washing away, rather than entering the barrel. This difficulty can be largely overcome, however, by slow rotation, increased pump pressures and the employment of heavier mud, but this method is expensive and consequently has been practiced by only a few companies in the case of key wells. In the rapid development of the East Texas Field, where low-priced oil has made costs a major item, the general practice is to take fulll cores, regardless of recovery, or to drill the sand with a fishtail bit.



Key map of East Texas area locating position of wells from which cores were secured.

Core Recovery

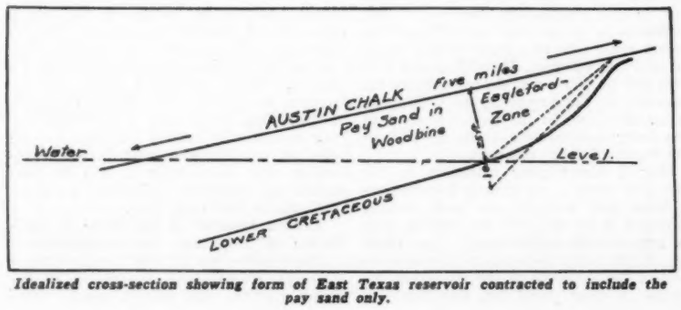
The question of core recovery is a vital one, since to the mechanical failure of this process may be attributed the data upon which the high yield theory has been built. In the average core now taken in the field, the total recovery will not exceed 35 per cent and the sand record, whether cored or drilled, contains many notations such as "no recovery, cut like sand" or "drilled like sand." In this connection it must be remembered that there are many varieties of sand in the Woodbine section of East Texas. In addition to the coarse, porous oil sand from which our main production is derived, there are fine grained, tight sands, silty sands, ashy sands and sandy shale. Much of this impure sand is barren, some of it is lightly saturated and some of it thoroughly stained with oil, but it is essentially nonporous in character and cannot be considered an important part of the reservoir. All of this sandy material will core and drill like sand and a large part of it is so loosely cemented that a plugged core barrel may wash through it without recovery. As a matter of fact, the general belief that a missed core indicates sand is proven erroneous by the fact that quite frequently cores cut in the Pecan Gap chalk, Taylor marl or Austin chalk, fail to show more than a minimum recovery.

The statement has been made that the question of core recovery is a very vital one. The question is particularly vital because in the majority of cores the recovery of high-grade oil sand is very small and it is necessary to place an extremely favorable interpretation on those zones of no recovery in order to give the field even a reasonable average thickness of good sand. The estimates, cited above, which give the heart of the field an average thickness of 40 feet of porous, oil-bearing sands must have had as a basis just such a favorable interpretation of these unknown factors to have arrived at this figure. The writer will attempt to illustrate this statement by a later presentation of representative, detailed core records.

Joiner Area Core

The thick sand area of the East Texas Field follows a general north-south direction and lies between the 3,200 and 3,250-foot contours on the pay horizon. Since the westward dip on the sand is in most places extremely flat, this strip takes in a large amount of acreage. The sandy section, as it enters the productive area from the eastern margin of deposition, thickens rather rapidly, and it is in this strip that it reaches its maximum thickness. The details of the section on the thin eastern margin are typified by the E. L. Smith Oil Co.'s No. 1 I. W. Wooley (No. 1 on map), which cored the sand with a complete recovery. This well lies on the east side of the Joiner area and has the following section:

3,541.0	Base of Austin chalk.
3,541.0-3,543.5	Hard, fine grained carbonaceous sand, partially saturated.
3,543.5-3,547.5	Coarse grained, saturated sand, interbedded streaks black shale.
3,547.5-3,552.5	Hard, thin bedded, gray shale.
3,552.5-3,554.5	Fine grained, light colored sand, lightly saturated.
3,554.5-3,555.5	Black shale.
3,555.5-3,556.0	Sand and volcanic ash, slightly saturated.
3,556.0-3,558.0	Black shale.
3,558.0-3,560.0	Hard, fine grained dry sandstone.
3,560.0-3,563.0	Black shale.
3,563.0-3,564.5	Fine grained, light colored sandy shale and sand. No oil.
3,564.5-3,565.5	Black shale; 3-in. quartzite at base.



Idealized cross-section showing form of East Texas reservoir contracted to include the pay sand only.

The section here represented includes 25 feet of sediments, of which about 3 feet may be considered commercially productive sand. At least 50 per cent of the section is sandy and might be interpreted, from the performance of the drill, as favorable material, but the core record shows it to be tight and nonporous, with little or no saturation. As has been said, this well represents the typical east side section, whether at Lathrop, Kilgore or Joiner. The well described was completed recently as a pumper, due to the close drilling and resulting dissipation of pressures to the west. Had it been finished at an earlier date it would no doubt have been a flowing well with a high initial production.

South Joiner Area

To illustrate the question of the lithologic makeup of the sand section, wells have been chosen in which the percentage of core recovery is the greatest. Other records will be included in which the recovery of cores was of negative quantity and where interpretation is dependent upon the action of the core barrel or bit at the time of cutting. In certain parts of the field, mainly that sector lying between the Kilgore and Joiner districts, no worth-while core records are available. In the field as a whole, but few operating companies have developed a technique whereby a maximum recovery of cores is possible and it is from the records of this small group that most of the data contained in this article have been selected.

In the Joiner area, the core record of an east side well has already been given above. In the thick sand section of this area the Stanolind Oil & Gas Co.'s No. 1-B Schuler, Cadena Survey, (No. 2 on map), got the following sand section:

3,624.0	Base Austin chalk.
3,624.0-3,629.0	Cored; recovered 2 inches fine grained saturated sand.
3,629.0-3,633.0	Full recovery lignitic silty sand and fine sand; no oil.
3,633.0-3,634.0	Recovered 10 inches fine lignitic silty sand; no oil.
3,634.0-3,644.0	Full recovery dark lignitic shale, slightly sandy; no oil.
3,644.0-3,645.0	Full recovery fine grained saturated sand.
3,645.0-3,647.0	Full recovery poker chip shale.
3,647.0-3,648.0	Boulder.
3,648.0-3,653.6	Poker chip shale.
3,653.6-3,654.0	Silty saturated sand.
3,654.0-3,658.0	Recovered 6 inches slightly saturated sand.
3,658.0-3,663.0	Hard, medium grained saturated sand.
3,663.0-3,668.0	No recovery; drilled like sand.
3,668.0-3,669.0	Dark sandy shale.
3,669.0-3,671.0	No recovery; drilled like sand.
3,671.0-3,682.0	Recovered 1 foot saturated sand and gravel; drilled like gravel.
3,682.0-3,686.0	No recovery; drilled like soft sand.
3,686.0-3,688.0	Lignitic shaley sand; no oil.
3,688.0-3,692.0	Recovered 2 inches soft saturated sand.
3,692.0-3,693.0	Dark sandy shale; total depth. Initial production 116 bbls. per hour, open tubing.

The record shows that this test cut 69 feet of pay section, with a core recovery of approximately 70 per cent. The material recovered includes high-grade sand amounting to 1 foot 8 inches, 7 feet of saturated material other than high-grade sand and 18 feet of blanks. The record indicates that but a minor part of the nonrecovered material may safely be classed as high-grade sand.

In this same district, in the Isaac

Moore Survey, Smith-Rusk County line, the Sun Oil Co.'s No. 1 Schuler (No. 3 on map) has the following sand record. The sand was partly cored and partly drilled.

3,636	Chalk.
3,636-3,640	Chalk, probably base Austin.
3,640-3,644	Cored; recovered 5 inches oil sand.
3,644-3,651	Hard, fine saturated sand.
3,651-3,653	Brown ash.
3,653-3,654	White ash.
3,654-3,655	Pebbles.
3,655-3,658	Cored; recovered 3 inches hard lightly saturated sand.
3,658-3,660	Ash and sand.
3,660-3,663	Cored; recovered 5 inches ash and some sand. Initial production 130 bbls. per hour through tubing.

Twenty-seven feet of the pay section was cut in this test, from which only a small amount of high-grade sand was recovered. The indefinite character of the record does not permit a statement as to actual sand percentages. Attention is called to the high proportion of ash.

London Area Core.

In the London area, no detailed core records are available. One well on the western edge of the thick sand section in this area, the Gulf Production Co.'s No. 2-A Shaw (No. 4 on map), got the following section:

3,734	Base of Austin chalk.
3,734-3,745	Sandy ash and red beds; no good sand.
3,745-3,747	Oil sand; oil and salt water; total depth.

The area from London, north to the South Kilgore district, is controlled by one or two companies and has been sparsely drilled. Practically all of the wells here have been completed in the top of the sand, with no core records preserved.

Rusk County West Edge Well

To the south of the Kilgore district, a well giving a good idea of west edge sand conditions is the Gulf Production Co.-E. L. Smith Oil Co.'s No. 2 Morris, W. R. Cooke Survey (No. 5 on map):

3,642	Base of Austin chalk.
3,642-3,648	Volcanic ash with two 2-inch stringers of saturated sand.
3,648-3,661	Red beds.
3,661-3,664	Ash with slight saturation.
3,664-3,665	Saturated sand with salt water.

Bateman Area Cores

In the Bateman area of the Kilgore district, an excellent picture of sand conditions is furnished by the core record of the Stanolind Oil & Gas Co.'s No. 6 Laird, I. Ruddle Survey (No. 6 on map). The sand section in this test was cored throughout:

3,648.5	Base of Austin chalk.
3,648.5-3,650.0	Cap rock.
3,650.0-3,664.0	Saturated sand.
3,664.0-3,665.0	Dry silty sand.
3,665.0-3,667.0	Lignitic poker chip shale.
3,667.0-3,668.0	Fine silty sand.
3,668.0-3,670.5	Fine sand, slightly saturated.
3,670.5-3,671.0	Silty sand.
3,671.0-3,673.0	Poker chip shale.
3,673.0-3,681.0	Fine, silty dry sand.
3,681.0-3,682.0	Fine, silty, slightly saturated sand.
3,682.0-3,684.5	Poker chip shale.
3,684.5-3,686.0	Fine, silty, dry sand.
3,686.0-3,691.0	Poker chip shale.
3,691.0-3,691.5	Saturated sand.
3,691.0-3,693.0	Poker chip shale.
3,693.0-3,694.0	Coarse saturated sand.
3,694.0-3,695.0	Dry sand and poker chip shale.
3,695.0-3,697.0	Coarse saturated sand.
3,691.5-3,693.0	Poker chip shale.
3,698.0-3,698.5	Saturated sand.
3,698.5-3,699.5	Dry silty sand.
3,699.5-3,701.0	Poker chip shale
3,701.0-3,702.5	Oil sand.
3,702.5-3,704.0	Poker chip shale.
3,704.0-3,705.0	Saturated sand.
3,705.0-3,706.0	Poker chip shale.
3,706.0-3,707.0	Saturated sand.
3,707.0-3,716.0	Poker chip shale.
3,716.0-3,717.0	Hard, fine, dry sand.
3,717.0-3,718.0	Poker chip shale.
3,718.0-3,718.5	Saturated sand.
3,718.5-3,722.0	Sandy poker chip shale.
3,722.0-3,723.0	Lignitic, saturated sand.
3,723.0-3,724.0	Poker chip shale.
3,724.0-3,725.0	Dry, silty sand.
3,725.0-3,728.0	Poker chip shale.
3,728.0-3,730.0	Cross-bedded, fine dry sand.
3,730.0-3,730.5	Coarse saturated sand.
3,730.5-3,731.0	Poker chip shale; total depth. Initial production 171 bbls. an hour through open tubing.

Coring in this test furnishes details of 81 feet of pay section of which 22.5 feet is saturated sand of varying degrees of porosity and 3.5 feet lightly saturated nonporous material. It must be borne in mind that this test is located in one of the most prolific areas in the field and that its initial production was estimated at about 20,000 bbls. per day.

In the same area, two other core records will be given, one of which makes a better sand showing than the No. 6 Laird, largely because of arbitrary interpretation permitted by poor core recovery. The Sun Oil Co.'s No. 5 Beall, William Chism Survey, southern Gregg County (No. 7 on map), has the following record:

3,572	Base of Austin chalk.
3,572-3,579	Cored; no recovery; hard.
3,579-3,582	Conglomerate.
3,582-3,583	Ash and sand.
3,583-3,587	No recovery; probably some sand.
3,587-3,591	Blue shale, sandy shale, red beds and ash.
3,591-3,596	Blue shale.
3,596-3,597	Yellow shale.
3,597-3,599	Red beds.
3,599-3,600	Hard conglomerate.
3,600-3,604	Cored oil sand; no recovery; total depth. Initial production 100 bbls. per hour through three-quarter inch choke.

If the sand record of the Shell Oil Co.'s No. 1 Watson, which follows, is to be interpreted literally, it has one of the best sand sections in the field. The upper main oil sand body was cored and not recovered, however, and its character is open to question. This test is located in the most favorable part of the Kilgore district, Carruthers Survey. (No. 8 on map.)

3,588.0	Cap rock.
3,588.0-3,610.0	Cored; oil sand; no recovery.
3,610.0-3,613.0	Hard, dark shale, slightly sandy.
3,613.0-3,615.0	Medium hard oil sand.
3,615.0-3,617.0	Hard, light gray, sandy shale.
3,617.0-3,618.0	Medium hard oil sand.
3,618.0-3,618.2	Ash.
3,618.0-3,620.0	Hard oil sand.
3,620.0-3,623.0	Hard white sand and ash.
3,623.0-3,625.0	Medium hard oil sand.
3,625.0-3,627.0	Hard white sand and ash.
3,627.0-3,628.0	Soft oil sand.
3,628.0-3,629.0	Hard white sand and ash.
3,629.0-3,630.0	Hard oil sand.
3,630.0-3,631.0	Hard, laminated ash, some hard white sand.
3,631.0-3,640.0	Medium oil sand.
3,640.0-3,641.0	Hard, white, dry sand.
3,641.0-3,644.0	Very hard lead colored shale.
3,644.0-3,645.5	Reddish colored concretion. (Hole corrected to 3,642.5 ft.)
3,642.5-3,644.0	Hard, white, dry fine grained sand.
3,644.0-3,646.0	Hard, dark gray, sandy shale.
3,646.0-3,647.0	Hard, white, dry sand.
3,647.0-3,648.0	Hard, dary gray sandy shale.
3,648.0-3,649.0	Light gray to reddish sandy shale.
3,649.0-3,652.0	Hard oil sand, numerous streaks lignite, (base almost quartzite). Initial production 200 bbls. an hour, 1½-inch choke.

The section above described includes 64 feet of material with the following sand classifications: High-grade saturated sand, 15 feet; saturated sands with minor porosity, 5.5 feet; nonrecovered material, 22 feet. If the 22-foot interval at the top of the core is to be classed as oil sand, the saturated section in this well comprises over 50 per cent of the whole. The belief that this whole interval is not occupied by saturated sand is lent credence by the record preceding this and by the one which follows. The sand record following is from the Sun Oil Co.'s No. 2 Lloyd, William Chism Survey, (No. 9 on map):

3,627	Black shale.
3,627-3,629	Ash.
3,629-3,634	Cored; no recovery; bit sand cut.
3,634-3,636	Ash, conglomerate and soft sand.
3,636-3,642	Drilled sticky, some sand.
3,642-3,647	Drilled like sand; total depth. Initial production 100 bbls. an hour, three-quarter inch choke.

These two wells, on either side of the No. 1 Watson, show very poor sands in the upper part of the section and might indicate that the upper 22 feet of the Watson is not predominantly sandy. This cannot be proved, however, and it may be that this well encountered an exceptional local thickness of pay sand.

South of Sabine River

To the north of Kilgore, in the thick sand area on the south side of the Sabine River, the Sun Oil Co.'s No. 1 Pentecost, Outlaw Survey, has the following sand section. Both coring and drilling were employed in this instance. (No. 10 on map.)

3,596	Base of Austin chalk.
3,596-3,600	Ash and gravel cap.
3,600-3,611	Cored; 1 foot recovery of sand. Drilled like sand.
3,611-3,614	Sand.
3,614-3,615	Shale, ash and conglomerate.
3,615-3,616	Hard, white sand and gravel.
3,616-3,621	Drilled like sand.
3,621-3,623	Shale and conglomerate.
3,623-3,624	Oil sand and gravel.
3,624-3,634	Cored; no recovery; cut like sand. Initial production 124 bbls. an hour, three-quarter inch choke.

This well presents another instance where the uncertainties created by poor core recovery make it possible to place a very favorable interpretation on the sand section. The blanks here constitute over 50 per cent of the section, but the evidence presented by wells with more complete recovery indicates that all of the missed section cannot justly be classed as saturated sand.

Another well along the south side of the Sabine, but on the west side of the field, furnishes the following sand section. This well is the Sun Oil Co.'s No. 1 Walker, William Friars Survey, (No. 11 on map).

3,692	Base of Austin chalk.
3,692-3,693	Cap.
3,693-3,698	Sticky black shale with 2 inches ash at base.
3,698-3,703	Blue sandy shale.
3,703-3,707	Ash and oil sand.
3,707-3,711	Sticky shale.
3,711-3,714	Drilled like sticky shale.
3,714-3,715	Red beds.
3,715-3,718	Hard oil sand. Initial production 40 bbls. per hour, one-half inch choke.

North Side Sabine River

Across the Sabine, north of the Sun's Pentecost well, the Vacuum Oil Co.'s No. 2 Zigler, P. McAnelly Survey (No. 12 on map) has the following sand section:

3,464.0	Base of Austin chalk.
3,464-3,474.0	Tight, dry sand, ash, shale and gravel. Few interbedded streaks of oil sand.
3,474-3,501.0	Drilled; very soft.
3,501-3,510.0	Cored; recovered 2 feet sandy conglomerate stained with oil.
3,510-3,517.0	Cored with 6½-foot recovery; shale.
3,517-3,522.5	Cored; gray lignite shale; no oil. Initial production 145 bbls. an hour, eleven-sixteenths inch choke.

This record shows two zones of no recovery; an interval of 27 feet at the top and 9 feet in the center. A considered part of these intervals must be considered saturated sand, although it is improbable that it will total more than 50 per cent of the whole.

Lathrop Area, South Part

In the south part of the Lathrop area, the Vacuum Oil Co.'s No. 1 White, D. Moore Survey, has cut a fairly thick section of Woodbine but the record loses much of its value by having been partially drilled with the bit. (No. 13 on map.)

3,493.0	Base of Austin chalk.
3,493.0-3,494.0	Cap.
3,494.0-3,500.0	Cored; gravel, ash and oil sand. No sand recovered.
3,500.0-3,509.0	Drilled; sand and gravel.
3,509.0-3,514.0	Drilled; soft sand.
3,514.0-3,515.0	Drilled; hard gravel.
3,515.0-3,531.0	Drilled; soft sand.
3,531.0-3,535.0	Hard, ashy, light gray, shaley sand.
3,535.0-3,538.0	Dark lignitic, laminated shale.
3,538.0-3,542.0	Drilled hard.
3,542.0-3,542.5	Saturated sand.
3,542.5-3,543.0	Reddish brown quartzite.
3,542.0-3,545.0	Hard oil sand.
3,445.0-3,546.0	Quartzite.
3,546.0-3,549.0	Hard, light gray shale.
3,549.0-3,552.0	Hard, light, ashy sand, oil stained.
3,552.0-3,554.0	Shale. Initial production 288 bbls. 15 min., open tubing.

Of the 60 feet of pay section penetrated in this test, less than 1 foot of

(Continued on Page 83)

PANORAMA OF THE TOWN OF GLADEWATER, GREGG COUNTY, TEXAS, AND A PORTION OF THE OIL FIELD

Photo by Ward & Banks, Gladewater, Tex.

Chart Papers May Cause Inaccuracies

Tests Show Errors in Orifice Meter Measurements Result From Expansion and Contraction Due to Atmospheric Conditions

By G. B. Linderman, Jr.
Consulting Engineer, Pittsburgh Equitable Meter Co.

The majority of orifice meter users have known for a long time that orifice meter charts expand and contract with changes in humidity and thus may cause errors in orifice meter measurements. However, the writer doubts if many know the extent of these inaccuracies. The following discussion is meant principally to point out reasons why it is sometimes difficult to make an integrator check accurately on chart circle tests. The same errors may occur in orifice meter measurement but the writer does not mean to imply that they always do. It has been the writer's intention merely to make a conservative estimate of the errors which may occur due only to changes in relative humidity.

Integrators themselves are remarkably accurate. When properly calibrated they are accurate within .2 of 1 per cent: that is, if the handles are locked the integrator will always repeat within .1 of 1 per cent; or if perfect circles on a template are traced the integrator results are accurate to within .2 of 1 per cent. However, in testing integrators with different batches of charts large errors occurred; that is errors of as much as 1 per cent. It was apparent that these errors lay outside the integrator itself so that the charts themselves were suspected.

Charts Themselves Investigated

It was decided, therefore, to investigate the charts themselves. To do this the apparatus shown in Figure 1 was set up. It consisted of two hermetically sealed boxes with glass tops arranged to contain specimens of chart paper connected to micrometer gauges. These boxes were fitted with inlet and exhaust ports so that either perfectly dry air or saturated air could be pumped through them. In the case of dry air it was pumped through absorption bottles containing concentrated sulphuric acid. This gave air of a moisture content of less than one-half of 1 per cent relative humidity. In order to get saturated air another set of absorption bottles was set up containing water. The air pumped through these would of course be saturated to almost 100 per cent relative humidity and thus simulate the conditions of a rainy day.

A sample of chart paper, cross machine direction, was placed in one of the boxes, and a sample of chart paper along machine direction was placed in the other box. Dry air was then allowed to circulate through these boxes for 48 hours or until no more contraction occurred. The reading of the indicator gauge was then noted and saturated air started through the boxes. This was allowed to circulate for another 48 hours and the elongation read from the micrometer gauges. Samples of the principal orifice meter chart papers were thus tested and the results are given in the accompanying table:

Expansion of Orifice Meter Chart Papers in Percentage of Length from Dry to Saturated Condition

	Cross machine direction	Machine direction	Average
Paper A	1.91%	0.62%	1.26%
Paper B	1.69%	0.79%	1.24%
Paper C	1.45%	0.56%	1.00%
Paper D	0.11%	0.11%	0.11%

The paper D, showing such a very small expansion, is a new chart paper that has recently been put on the market by the Pittsburgh Equitable Meter Co., under the trade name Alemco. It consists of aluminum foil coated on both sides with a high grade sulphite paper. With these results it is interesting to investigate the inaccuracies arising from them both in integrator calculations and in orifice meter measurement.

Deriving a Formula

In deriving a formula for determining this inaccuracy the following assumptions have been made:

1. That the charts were printed from perfectly accurate plates. As a matter of interest the plates used by the meter manufacturers are accurate to within 0.005 of an inch. That is, the accuracy of the radius of any line on a chart will be within 0.005 of an inch. In order to get this accuracy it has been necessary for the meter manufacturers to go to great trouble and expense, not only in making the plates from which the charts are printed but in getting special presses which are built especially for this type of accurate printing.

2. That the charts were printed when half of the total expansion had taken place. In other words, that they were printed under the most advantageously controlled conditions of humidity and temperature. This is not necessarily when the relative humidity is 50 per cent as by far the larger part of the expansion occurs when the air contains between 50 and 100 per cent relative humidity.

3. That the meter was adjusted to zero on the chart before the chart had changed, or that the integrator was adjusted on a perfectly accurate chart.

4. That while the chart was on the meter it had rained and the air had become saturated, or that the integrator had been used to integrate a chart which has been exposed to air which contained 100 per cent relative humidity.

In Figure 2 let A = distance from center of chart to the zero line on the chart in inches.

B = The distance from the zero line on the chart to the outside line on the chart in inches.

C = The distance in inches from the zero line on the chart to the line recorded by the meter.

R = The reading of the outside line on the chart. That is, on a 100-inch differential chart it would be 100.

r = The scale reading recorded by the meter on the chart.

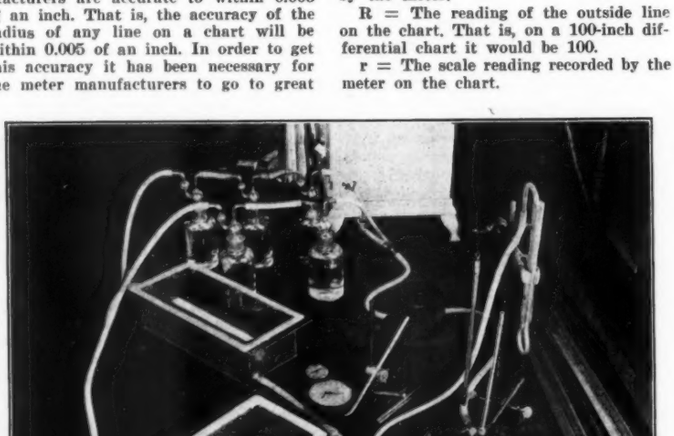


Figure 1.

E = The total expansion of the chart in percentage between the completely dry condition and completely saturated air condition.

Movement of Point of Record

Then the movement of the point of record from where it should be, due to expansion is

$$(A+C)\frac{E}{2\times 100} \qquad (1)$$

The factor 2 in the denominator comes in because we are only considering the effect due to half of the expansion of the paper.

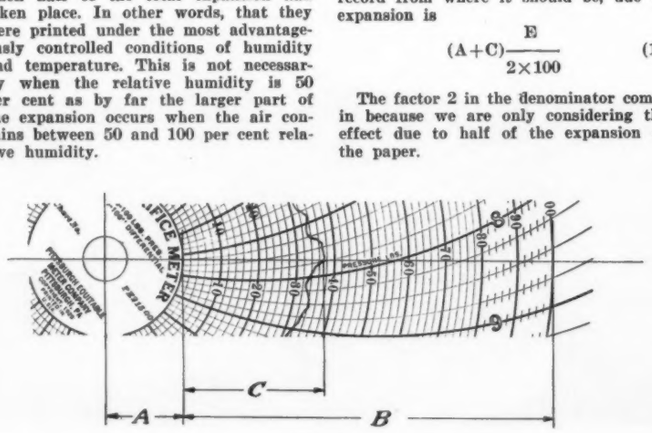


Figure 2.

The percentage error Q of the reading will =

$$\left(\frac{A+C}{C}\right)\frac{E}{2} \qquad (2)$$

$$\text{but } C = \frac{r}{R}B \qquad (3)$$

Substituting (3) in (2) we get

Percentage error of reading =

$$\left[\frac{A+\frac{r}{R}B}{\frac{r}{R}B}\right]\frac{E}{2}$$

$$Q = \left(\frac{A\,R + B\,r}{B\,r}\right)\frac{E}{2}$$

In using this formula it will be necessary to bear in mind several things. In the first place, when applying it to meter readings, it must be remembered that the errors of the record of either variable (that is, either static or differential) only affect the accuracy of the meter reading by one-half. This is because the volume of gas is proportional to the square root of the product of these quantities. This is true when these errors are small[1]. The total error is therefore proportional to one-half the sum of the errors of the two variables.

Air-Tightness of Case

In the second place, most orifice meter cases are more or less air-tight. This may or may not be an advantage. If the case is air-tight and the temperature does not change the relative humidity inside the case will not change irrespective of any changes in the relative humidity outside the case. However, if the temperature does change the relative humidity inside the case will change even if there is no change in the external relative humidity. As an example let us assume that the relative humidity of the air is 50 per cent and the external temperature is 70° F. when the chart is changed and the case closed. This will probably be done in the day time. During the night, if the temperature should drop 20 degrees the relative humidity inside of the case will increase to 98 per cent even if the relative humidity outside the case does not change at all. This same natural law affects integrator calculations. In the winter time, if the outside temperature is 50 degrees and the relative humidity

(Continued on Page 82)

[1]Note—The proof of this statement is as follows: When an expression involves a number of variables, x, y, z, etc., as in the case f (x, y, z) the change in the expression produced by slight changes in x, y, z, etc., may be calculated by the formula for the total differential of f, namely:

$$df = \frac{\delta f}{\delta x}dx + \frac{\delta f}{\delta y}dy + \frac{\delta f}{\delta z}dz + \ldots$$

where dx, dy, dz, represent the slight changes in x, y, z, etc. Applying this to the orifice meter formula,

$$Q = \sqrt{h\,p}$$

we have

$$\log Q = \log C + \tfrac{1}{2}\log h + \tfrac{1}{2}\log p$$

$$\frac{DQ}{Q} = \tfrac{1}{2}\frac{dh}{h} + \tfrac{1}{2}\frac{dp}{p}$$

Hence the relative or percentage error in Q is the sum of the relative or percentage errors in each of the variables h and p each multiplied by the power to which that variable enters into the expression.

Records Indicate New Wells Essential

Survey of 1931 Shows That Production Now Equals Daily Demand and Drilling Operations Have Been Greatly Reduced During Past Year

By L. G. E. Bignell
Petroleum Engineering Editor

In making a survey of the development carried on in the petroleum industry in this country in 1931 it was developed that only 6,703 oil wells were completed in that 12 months' period. The total number of completions of all kinds was 12,245. There were 3,560 dry holes reported and 1,982 gas wells, which with the 6,703 oil wells will make up that total. This is the smallest number of completions reported in this country since 1898.

In the years 1899 to 1930 inclusive there were a total of 682,512 completions of all kinds reported, or an average for the 32 years of 21,328.5 completions. The greatest number of completions occurred in 1920 when 34,019 were reported and the smallest number was in 1915 when only 14,185 were made in this country. During the same 32-year period the oil wells completed in the United States totaled 480,603 or an average of 15,018.8 per year.

The records further show that the least number of oil wells was finished in 1915 when only 9,155 were drilled. In 1898, the last year in which the total number of completions were less than in 1931, there were 7,058 oil wells reported, a greater number than completed last year.

Of the wells completed in the period betwen 1899 and 1930 about 70.5 per cent were oil wells. Of the completions in 1931 only 54.6 per cent were oil wells. It is true that the wells completed in 1931 showed a high initial production, reported as 810.2 bbls. per well. However, due to the proration rulings effective in many fields it was difficult to ascertain accurately what wells did on initial flow because many of them were tested for short periods only. For the period 1922 to 1931, inclusive, the average initial production of wells completed was 436 bbls. The highest average flush production was in 1930 when 855.3 bbls. per well was recorded and the lowest in 1926 with the average only 193.7 bbls.

The significance of these figures is that deeper drilling is securing larger flush wells but that the proportion of oil wells completed to total wells drilled is gradually becoming smaller. In other words, the industry is now working upon a constantly decreasing law of chance of finding new pools because the oil provinces of this country have been quite thoroughly explored, especially in the upper formations.

This does not mean that the geological profession has by any means approached the end of its usefulness, but rather that for future oil exploration this science will have to be applied more intently and all of the newer methods developed in recent years used in order that all available data of regions where oil may be found can be secured in advance of actual drilling.

With the discovery of the East Texas oil field a new conception of oil accumulation has been emphasized. Other pools of a somewhat similar character have been found before the driller opened the East Texas area, but the intense geological study that has ben devoted to that field since it has been opened has given the geological profession some new ideas for the application of known practices and it may be that other fields of like character will be opened in the future.

In the February 11 issue of The Oil and Gas Journal, James McIntyre has presented a tabulation of the oil produced from 98 major oil pools of this country in 1931. A study of this table is interesting in that it shows that all pools have had a comparatively rapid decline in production after the peak of production has been passed.

This peak of flush production has usually occurred a short time after the drilling peak was passed, and in the past it has been marked by decline in price of crude oil due to excessive production during the period of development of the pools under competitive drilling conditions.

Only a few fields show an increase in the amount of oil produced in 1931 over that of 1930 and they are: Kettleman Hills, California; East Texas oil pools, consisting of the Joiner, Kilgore and Longview Fields; Mirando, Texas; Big Lake, Texas; Van Pool, Texas; Oklahoma City, Oklahoma; Carr City, Oklahoma; Wewoka, Oklahoma; McPherson County, Kansas, and Lea County, New Mexico.

Of these fields only Kettleman Hills, California, has not reached its peak. As it is being operated under unit control agreement it is not likely that it will ever be produced at a greater rate than the market conditions warrant.

It will thereferoe be seen that out of 98 fields producing more than 10,000,000 bbls. per year only 10 had an increase in output during 1931, and of those 10 only one has possibilities that will permit of a further increase in rate of production in the future.

FORECAST OF DAILY PRODUCTION AND REQUIREMENTS FOR SUMMER 1932

Tabulation of estimated daily production that will be available when restrictions due to mechanical and natural conditions are considered.

All states except Oklahoma, Texas and California	376,160*	bbls.
California	525,000	bbls.
Oklahoma (outside of Okla. City and Seminole)	230,000	bbls.
Oklahoma City Pool	200,000	bbls.
Seminole area	150,000	bbls.
Texas (exclusive of Yates, Van and East Texas)	350,000	bbls.
Yates Pool, Pecos County	100,000	bbls.
Van Pool, Van Zandt County	50,000	bbls.
East Texas oil fields	300,000	bbls.
Total available oil per day	2,281,160	bbls.
Estimated requirements of domestic crude for runs to stills during summer months of 1932	2,350,000	bbls.
Difference	68,840	bbls.

* This includes 40,000 bbls. per day from Hobbs, N. Mex. Pool.

In the Mid-Continent area there are six fields that have been considered as still in the flush production stage. They are Oklahoma City and Seminole areas in Oklahoma; Hobbs, New Mexico; Yates Pool, Van Pool and the East Texas oil fields of Texas. Those areas will be considered individually from the standpoint of possible rate of production during 1932 to secure some idea of where the industry can secure its estimated daily requirements of 2,350,000 bbls. of oil during the summer months.

In the Oklahoma City Pool there are four producing horizons, into which the field has been divided. They are the Fault, Arbuckle, Lower Simpson and Upper Simpson or Wilcox areas.

The Fault area lies to the east of the fault line and only four wells were assigned to it and their potential is small, less than 10,000 bbls. per day, and the capacity to produce is quite limited.

In the Arbuckle lime area there were about 50 wells capable of making some oil, but only about 35 that were actually producing. This limit in production was caused by the amount of water each well made with the oil. As the water rate increases these wells will be shut in and the amount of oil available from that section of the pool will therefore be decreasing at a comparatively rapid rate. It has been estimated that there is about 1,000,000 bbls. of oil still to be recovered from that area and the percentage of this oil that will actually be recovered will be limited by the rate of water increase.

Lower Simpson Area

The next area of production in Oklahoma City Pool is known as the Simpson formation and it contains three main oil sands, the Johnson, School Land and Green Shale sands. There are about 12 different combinations of these sands in the various producing wells in this area. It is reported that the water level datum lime in these three producing horizons is about uniform and this has played an important part in the thickness of sand penetrated and production of oil.

If wells were drilled too low and water broke into them they have been plugged back to upper levels. At last report 122 wells in the Simpson area were making water and 14 others in the same zone had been plugged back and secured satisfactory shutoff or had been converted into gas producers from the upper gas sand horizons. These water wells are found in all parts of the Simpson formation in this field and the water movement has been quite uniform.

A study of the water contour map of the Oklahoma City Field shows that after water has made its appearance in one of these Simpson wells it has spread out and has gradually flooded a large area in every direction. It has moved both up and down dip in the formation, and it has even passed up over the crest of the anticline and continued to move down the other side.

In the Upper Simpson or Wilcox sand area it is estimated there is still about 200,000,000 bbls. of recoverable oil. The average sand thickness for this area is estimated at 115 feet, and the yield may be as much as 75,000 bbls. per acre. There are only 10 wells in this area reported as now making water and they are scattered, but are found in both the north and south end of the field.

The Wilcox wells have all had high initial production and can still make a lot of oil each day if they can be kept in operating condition. The trouble confronting the operator in this area is largely mechanical for most of these Wil-

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TEXAS OUSTER SUIT HEARING POSTPONED FOR ARGUMENTS

AUSTIN, Tex., Feb. 15.—Date for the appearance here of President R. C. Holmes and operating vice presidents of The Texas Company, from New York, and officials from Houston, to testify before special commissioner George E. Shelley in Atty.-Gen. James V. Allred's penalty and ouster suit against 15 companies and two marketing associations, has been left undetermined in District Judge J. D. Moore's court, pending conclusion of preliminary arguments in the case.

The order called upon The Texas Company to produce its officials here Monday of this week, but the arguments in the case were set over from Friday until Wednesday of this week, still far from conclusion, and as attorneys wanted to be present in the questioning of the witnesses before the commissioner, it was agreed to let the appearance of the officials remain in abeyance temporarily before the new date is decided.

When the case was recessed Friday attorneys for oil companies had closed arguments, and members of the attorney general's staff will, within one to two days, complete the rejoinder on the pending preliminary issue. That issue is based on Mr. Allred's motion for a default judgment against the Socony-Vacuum Corp., New York; Standard Oil Co. of California, and the Standard Oil Co., New Jersey, for failure to file answers, and the attack being made by attorneys for the companies on his steps of procedure seeking to subject the companies to jurisdiction of the court. The attorneys contended that the State cannot exercise a writ of attachment or fix a lien upon stock of companies in Texas owned by the foreign companies except after a final trial and judgment, if at all. Such an attachment has been asserted necessary, along with personal service outside the State on officials of the companies, to bring the oil companies within court.

Arguments on the motion for default judgment against the Shell Union Oil Corp. were to follow.

Indications were given that the cases may be greatly prolonged by the demands for separate trials on the part of at least three different groups of the corporations named.

One of these groups is the companies within the State; another that of the foreign companies which have Texas corporation subsidiaries; and the third, such as that of the Pasotex Petroleum Corp. and the Standard Oil Co. of California, where an out-of-state company has a subsidiary operating in Texas which also is an out-of-state corporation.

Texas Gas Conservation Law Upheld

Three-Judge Federal Court Sustains Validity of Act in Panhandle Case. Railroad Commission's Power Recognized

AUSTIN, Tex., Feb. 15.—The State Railroad Commission announced a policy of thorough enforcement of the natural gas conservation law after the decision of the three-judge federal court at Houston had sustained its validity in litigation between F. C. Henderson, Inc., and the commission.

The court decision denied Henderson injunctions that would have restrained the commission from interfering with his operation of a casinghead gasoline extraction plant in the Panhandle. It granted the commission's plea for an injunction to restrain Henderson from the wasteful use of the natural gas. It ordered him to stop using gasoline in the extraction plant until provisions could be made for using the residue gas. He had been allowing stripped gas to be blown into the air.

"The decision will greatly strengthen our conservation of natural gas," Chief Supervisor R. D. Parker of the oil and gas division, commented.

The decision, written by Circuit Judge J. C. Hutcheson, after a hearing in which Federal District Judges W. I. Grubb and DuVal West sat, declared the evidence showed Henderson was wasting twenty-three-twenty-fourths of the heat unit of the natural gas run through his plant. It also recited that evidence showed 95 per cent of the natural gas produced in Texas contains extractable quantities of casinghead gasoline. It quoted sections of the gas conservation law which defined waste as allowing the gas to escape into the air, and which made an exception for the escape of gas produced in connection with oil.

Delegation of the power to the Railroad Commission to conserve oil and gas resources was declared "universally recognized as reasonable, valid and appropriate."

The opinion said that the court did not hold that if proof were made the law forever denied the gas owner of a market that he would be entitled to no relief. It said testimony tends to show that the supply of gas is limited, "and unless measures to prevent its wasteful handling and use are taken, these apparently vast resources will soon be dissipated, never to be reclaimed. We see nothing unreasonable in the statute, and especially nothing unreasonable in its application to the plaintiff and its contractors, whose use of the gas is not only in direct violation of the purpose of the statute, but of its very terms, constituting as it does, reckless and improvident waste of the plainest kind."

Opinion of the Court

Circuit Judge Hutcheson: This is a suit for an injunction against the Railroad Commission and the Attorney General of Texas, from harassing, annoying or preventing plaintiff from operating its nautral gasoline plant, and from prosecuting any suit for injunction or for penalties against plaintiff and the persons from whom it has purchased gas.

The statutes attacked (Articles 6008 and 6014 of the Revised Civil Statutes of Texas of 1925, as amended by the Forty-second Legislature at its first called session in 1931) purport to deal with and prevent the dissipation of the state's natural resources of oil and gas; they generally denounce waste and specifically prohibit the wasteful utilization of natural gas and its escape into the air. The statutes were enacted in pursuance of a policy entered upon by the State of Texas many years ago to conserve from waste its vast deposits of oil and gas. They with other enactments make out the general outline of the legislative plan, the administration and application of which is confided to the Railroad Commission of Texas under appropriate laws. In Macmillan vs. Railroad Co. No. of Texas 51 Fed (2nd) 400, in which the orders of the commission were declared invalid because in violation of the statutes, this court had occasion to examine this statutory plan, its general validity, and the place of the commission in its carrying out. We there affirmed the general power of the state to conserve its natural resources, including oil and gas, and to confide to the commission the administration of those laws.

Statutes in Question

What is in question here is not the orders of the commission, but the statutes themselves. The question for our decision is whether the plaintiff is right in its

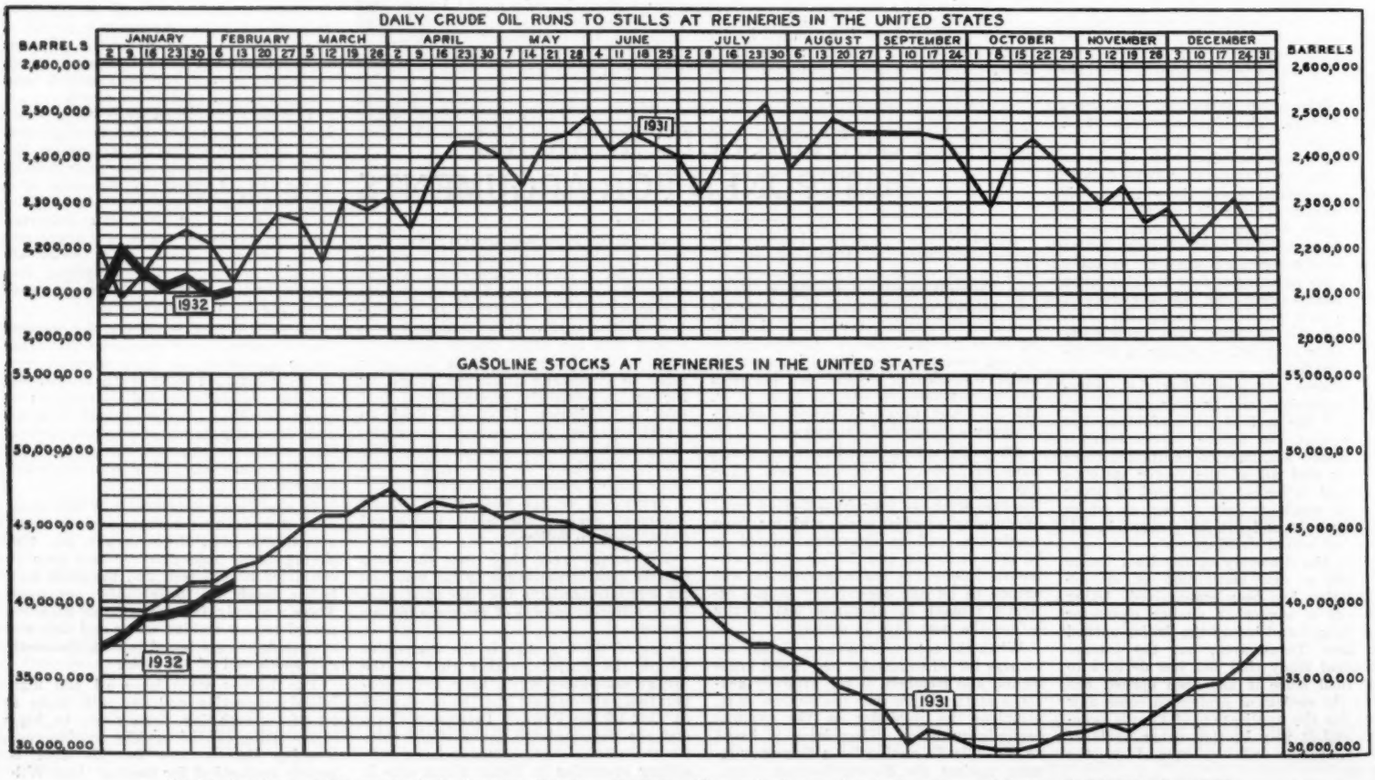
(Continued on Page 32)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending February 13:

	Week ending February 13				Week ending February 6				Week ending February 7, 1931			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	425,000	5,676,000	7,110,000	100.0	452,900	5,228,000	7,395,000	100.0	448,600	7,018,000	7,905,000
Appalachian	91.8	96,100	1,765,000	1,314,000	91.8	77,100	1,618,000	1,297,000	93.8	82,100	1,359,000	1,072,000
Indiana, Illinois, Kentucky	98.9	276,000	5,329,000	4,813,000	98.9	254,900	5,065,000	4,906,000	97.5	261,100	4,836,000	3,125,000
Oklahoma, Kansas, Missouri	89.6	216,400	3,855,000	3,338,000	89.6	206,900	3,560,000	3,527,000	89.4	236,700	2,921,000	3,844,000
Texas	91.2	486,900	9,402,000	10,656,000	91.3	476,300	8,862,000	10,710,000	91.9	510,000	6,976,000	9,908,000
Louisiana and Arkansas	98.9	151,700	1,357,000	4,100,000	98.9	143,400	1,245,000	3,987,000	98.3	138,000	1,698,000	2,320,000
Rocky Mountain	89.4	33,200	1,982,000	721,000	89.4	36,300	1,931,000	726,000	93.1	36,300	1,738,000	940,000
California	97.1	443,600	14,064,000	96,168,000	97.1	464,100	13,867,000	96,157,000	98.8	426,600	15,861,000	101,829,000
Total United States	95.2	2,128,900	43,430,000	128,225,000	95.2	2,111,900	41,376,000	128,765,000	95.7	2,139,400	42,457,000	130,943,000
Texas Gulf Coast	99.8	362,400	7,505,000	7,861,000	99.8	367,000	6,996,000	7,914,000	100.0	403,400	5,962,000	7,476,000
Louisiana Gulf Coast	100.0	106,000	1,193,000	3,282,000	100.0	95,700	1,089,000	3,137,000	100.0	100,600	1,502,000	1,329,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) gas and fuel oil stocks.



All data based on weekly reports of the American Petroleum Institute. Figures for last week not shown in graph but are included in above table.

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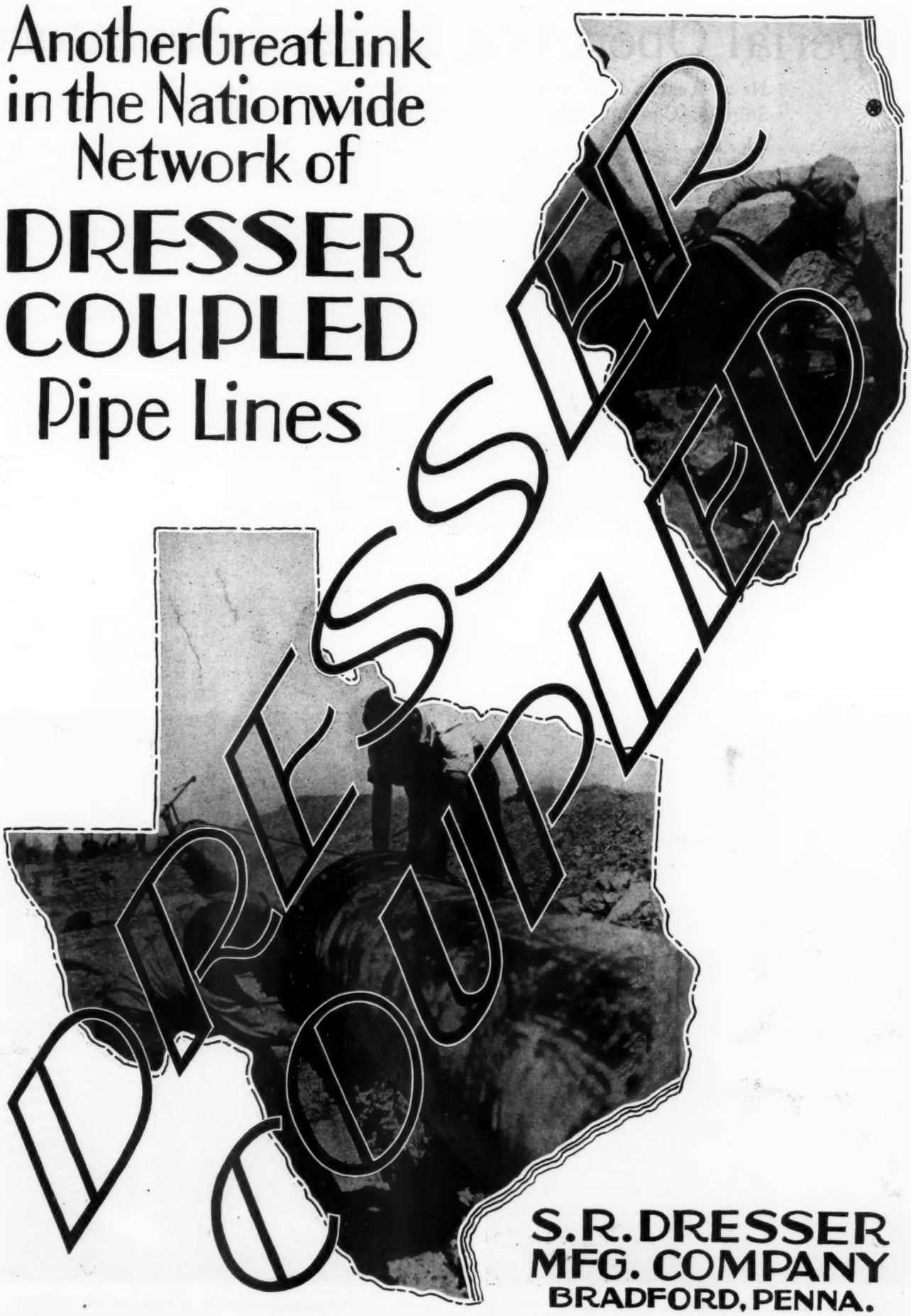

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Imperial Operating Large Laboratory

New "Test House" Features Vacuum Distillation of Lub Oils, Sulphur Content Research, and Experimental Still Activities

Imperial Oil, Ltd., is now operating a new and modern "test house," or laboratory, at its Sarnia, Ontario, Canada, refinery. "In this building," according to Dr. J. L. Hugett of the company's technical research staff, "those particular functions performed by that class of people often considered peculiar and known as chemists are carried on with the aid of the latest mechanical equipment and a staff of capable assistants. The name 'Laboratory' adorns the main entrance, enhancing the dignity of the building in the minds of its occupants who have become accustomed to the appelation 'test house,' a name that has long since ceased to describe adequately the work done there."

The recent reorganization of the chemical research work of Imperial Oil, Ltd., has involved the division of its laboratory forces into two departments, the inspection department and the technical and research division, working in close cooperation.

The inspection department is under the direction of Gordon McIntyre, chief chemist, and checks up on the specifications of current production at the refinery. The total personnel of this department varies between 50 and 60, with a staff of seven chemists operating under the direction of Mr. McIntyre.

The technical and research division is under the direction of Dr. R. K. Stratford, chief research chemist, and is constantly working to develop improved products in keeping with automotive and industrial progress and to increase the efficiency of Imperial's various refineries, so far as problems involving chemistry are concerned. Dr. Stratford's staff numbers 25, including seven chemists.

The inspection department occupies one floor of the new laboratory building and controls the auxiliary laboratory at Plant No. 2, the asphalt plant control laboratory, and the knock rating room.

For the purpose of description, the work carried on in this department will be divided into two general categories—chemical and physical. The latter term refers to inspections such as gravity and viscosity, which properties are of a physical nature, while the term "chemical" will be used to cover inspections involving the use of chemical reagents or will imply chemical changes in the products themselves.

Apparatus for determining the sulphur content of gasoline and illuminating oils.

All the inspections of Imperial Oil products and incoming raw materials which require the use of chemicals are carried on in this department. Raw materials such as animal and vegetable oils, fats, fatty acids, and waxes must meet rigid specifications to ensure the maintenance of the high quality of Imperial Oil greases and compounded oils. Shipments of caustic soda and lime are carefully analyzed to be certain that the minimum specification on inert and abrasive material is not exceeded, thus avoiding the presence of undesirable impurities in the greases.

Analyses of petroleum oils are made to determine the percentage of inorganic and organic acidity. The former term refers to mineral acids such as sulphuric acid. These acids are highly undesirable in petroleum oils on account of their affinity for metals. Their presence would indicate faulty refinery methods. Inorganic acidity is reduced to nil in Imperial Oil products by recourse to neutralizing with alkalies or adsorption by clay. Organic acids are much less active than inorganic as regards metals. Imperial Oil specifications permit only an extremely low percentage of this type of acid.

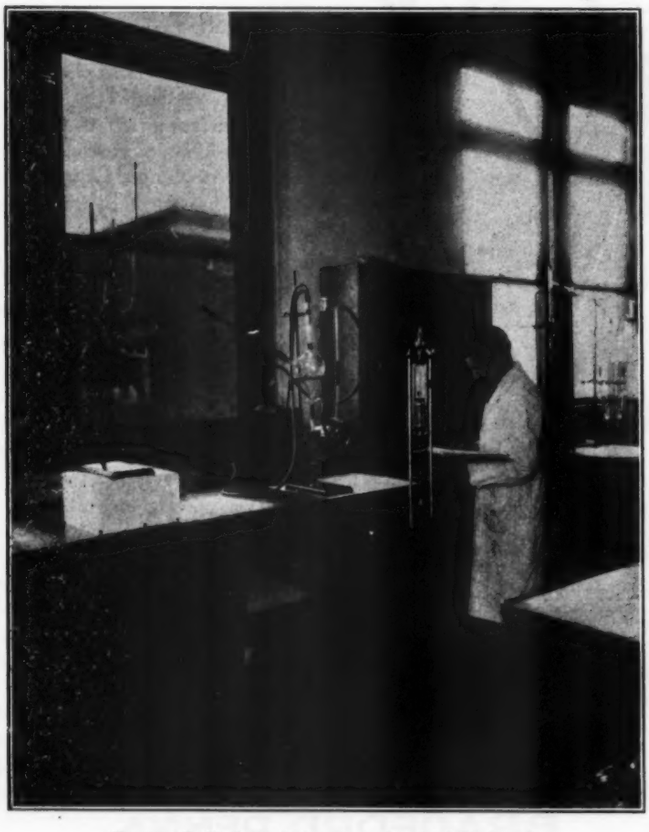
Acidity and alkalinity impart different properties to greases. The excess is maintained at a very low figure in the greases wherein it is desirable, while in other types of grease the reaction must be neutral. The saponification value indicates the degree of completion of the soap-making process. A high value indicates that free fat still remains. When the reaction is completed the soap is incorporated in oil to form grease. Formulae for greases and soluble oils are developed in this laboratory.

The chemical department is responsible for all determinations of an analytical nature, such as sulphur and B.t.u. values of gas, coal, coke, fuel oil, etc. The latter determination is a measure of the heat available in calories per pound of material.

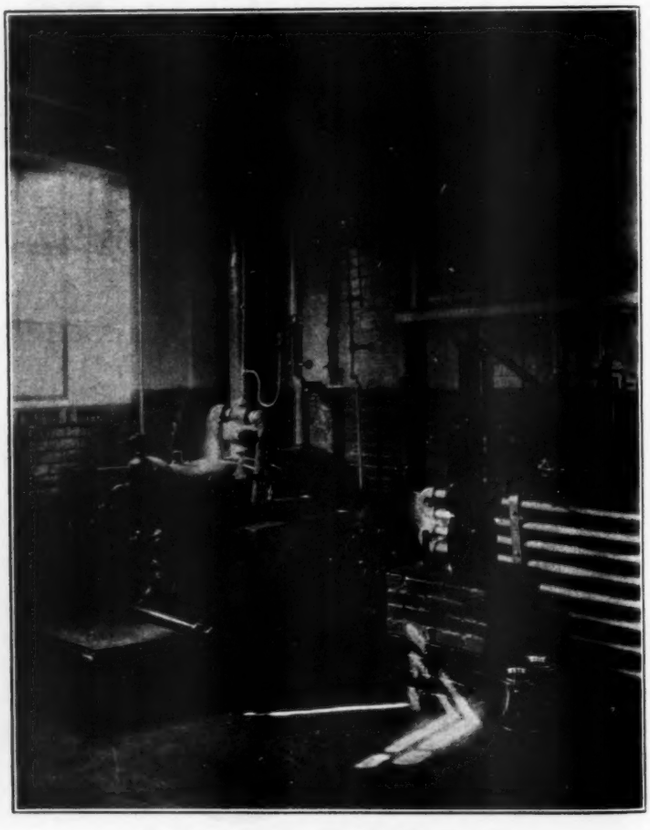
The more involved physical inspections, such as the demulsibility of oils destined to be used in contact with steam, and those involving chemical changes in the oil, such as oxidation and sludging, are carried out in this laboratory.

It has been found convenient to divide

(Continued on Page 85)



Vacuum distillation unit for the study of lubricating oils.



Experimental vacuum still and small crude still.

Why good time was made in laying this

MISSISSIPPI CROSSING

A dredge . . . several launches . . . three barges . . . about 2400 feet of 12-inch NATIONAL Pipe for each of six lines reaching from shore to shore . . . suitable river clamps for welded joints . . . valves and headers to gather together the six 12-inch pipes at each end, terminating in two 18-inch lines . . . enough 18-inch NATIONAL Pipe to extend, double, from the water's edge to the bluff on either side . . . a small army of men . . . a sound plan and courageous, capable supervision. And so the Mississippi River Crossing at Muscatine, Iowa, on the Chicago Natural Gas Line of the Continental Construction Company, was completed by the Pacific Bridge Company in thirty-four working days.

The use of NATIONAL Pipe for this crossing of the Mississippi agrees with the prevailing practice of engineers on difficult undertakings. For such important projects, the well known strength, ductility and durability of NATIONAL Pipe have made it—

America's Preferred Wrought Pipe for River Crossings

NATIONAL TUBE COMPANY, Pittsburgh, Pa.
Subsidiary of United States Steel Corporation

NATIONAL PIPE

EXCISE TAX MAY BE REPORTED; COMMITTEE ABANDONS TARIFF

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 15.—It is understood by advocates of a tax on imported crude and fuel oil that the Ways and Means Committee will report the excise tax. As no official vote has been taken the rate may be reduced as likely to produce more revenue, but nothing is certain now about any action.

The proposed excise tax is 2 cents a gallon on crude and fuel oil and 4 cents on gasoline. There is no intention at this time of placing any tax on lubricating oil and wax, both of which have been mentioned as possible sources of revenue.

The petroleum section of the revenue bill has not been reached by the committee in the fixing of duties of the several schedules under consideration. Probably it will have final consideration in about a week or 10 days.

The committee has abandoned the idea of having an import duty on oil. Such a duty would be collected by the Customs Service while the excise tax would be collected by the Bureau of Internal Revenue. There is no other difference in placing a tax on the imported article, except possibly that a tariff tax would be higher.

For some time there was uncertainty about the method to be employed in gathering this tax and means for identifying it at gasoline stations were discussed. It soon became evident that the excise duty would have to be levied at the port of entry in practically the same manner that an import duty would be levied and the tax collected and that is the plan favored at this time.

High Spots in Field News

KANSAS

New wells in Central Kansas Fields and new development also. Extension of Voshell Pool a mile and a half south.

CALIFORNIA

E. B. Reeser makes report to Governor Rolph. California awaiting legal outcome of suit and Sharkey law election.

NORTH LOUISIANA, ARKANSAS, MISSISSIPPI

Gas wildcatters busy in Mississippi while North Louisiana and Arkansas are quiet. Test work expected this year.

GULF COAST

Rabbs Ridge area extended to north. Second producer in new play at Barbers Hill. Victoria County is holding interest.

SOUTHWEST TEXAS

Pettus Field extended westward by 1,500 bbl. well 700 feet west of nearest producer. Two 6,000-foot tests in Southwest Texas.

OKLAHOMA

Shallower areas are getting play in Carter, Seminole, Pontotoc and Stephens Counties. Allowable for Oklahoma City has been reduced 1,000 bbls.

ROCKY MOUNTAIN AREA

New locations in Southern Hobbs Pool. Geary Dome test gets water. Midway Dome development planned. Greasewood edge test finds less sand.

EAST TEXAS

Joiner area extended 1½ miles south. Total number of wells in East Texas now 4,160; 88 completions during the week and 109 locations. Preparing for pumping stage.

WEST AND NORTH TEXAS AND PANHANDLE

Thirty new locations in Wichita Falls area, five in West Texas and four in Panhandle. Ward County most active in Permian basin. Yates Pool total recovery estimated at 604,000,000 bbls.

UNIT OPERATION PLAN FOR BIG SAND DRAW

WASHINGTON, D. C., Feb. 15.—Secretary Wilbur has signed the agreement for unit operation of the Big Sand Draw gas field in Fremont County, Wyoming. This is the third agreement signed by the Secretary for unit operation in oil and gas areas in the West.

The unitized area of the Big Sand Draw gas field consists of 1,960 acres, variously owned and estimated as containing in excess of 200,000,000,000 feet of gas. The field is already developed and gas is being marketed in 26 municipalities in central and southeastern Wyoming and in southwestern Nebraska.

The area is covered in part by the United States public land, under lease, in part by a placer mining claim, and in part by land privately owned. Under the agreement all of these owners pool their acreage, agree to co-operative operation of the field, and a proportionate division of the profits that accrue from it.—C. E. K.

CHAMPLIN CASE MARCH 28

Arguments before the Supreme Court of the United States on the validity of the Oklahoma oil conservation laws is scheduled in Washington, D. C., March 28.

The Champlin Oil & Refining Co. case was admitted to review by the Supreme Court about six week ago.

A supplemental pleading calling attention of the Supreme Court to the fact that Oklahoma conservation laws have been administered by national guard troops was filed in conjunction with the petition by Champlin, but whether the court would take cognizance of it was not known.

Champlin appealed from an adverse decision rendered by a three-judge Federal Court at Guthrie, Okla., August 5.

PAMPA A.P.I. CHAPTER

PAMPA, Tex., Feb. 15.—Ed Warren, superintendent of the Continental Oil Co. here, was elected chairman of the Pampa chapter of the American Petroleum Institute at the organization meeting. About 300 attended. H. M. Blakeslee of Dallas was the principal speaker. Other officers chosen were Ed Bissett of the Skelly Oil Co., vice chairman, and Hugh Allspaugh of the Dixon Creek Oil Co., second vice chairman.

TORSION TESTS IN REAGAN

BIG LAKE, Tex., Feb. 15.—Torsion balance crews of the Humble Oil & Refining Co. are making surveys of Reagan and Crockett Counties. C. R. Church and H. H. Holtzman, who are in charge of the work, have established headquarters at Big Lake and will be there about six months, they say. Humble owns 27 sections of leases in Reagan, but has no production.

Late Fields

OKLAHOMA

In the southern part of Oklahoma activity continues around the area about 5 miles south and west of Duncan, in Stephens County. During the week two completions and a location were made. Drilling operations started at three locations during the week.

P. L. Gilbert and others' No. 1 Green, SW cor. SE NE, Section 2-2s-8w, Stephens County, flowed and swabbed 52 bbls. of oil in seven and one-half hours from sand at 1,368-76 feet. The well is estimated at 150 bbls. a day. It extended production in the area two locations north and one east. M. C. Brown and others' No. 1 Thompson, NE cor. SE SW, Section 35-1s-8w, was abandoned at a total depth of 2,050 feet after failing to complete a fishing job.

Chamberlain and others No. 1 C. P. Parker, NE cor. SE SE, Section 11-2s-8w, is a rig complete. It is located about a mile south of the center of activity in the field.

Continental Oil Co.'s No. 2 Dare, NW cor. SW SE, Section 2-2s-8w, logged a dry sand at 1,363-74 feet and was drilling deeper at 1,385 feet.

Production of the Oklahoma City Field, February 15, was 36,884 bbls. from 95 wells. On February 16, at 7 a. m., the field made 41,888 bbls. from 107 wells.

Bebee Oil Co.'s No. 1 Starrit, SE cor., Section 30-5-5, is a new location in Pontotoc County. It offsets a Hunton lime well in the SW cor., Section 29-5-5.

In the Tatums Pool, in Carter County, Carter Oil Co.'s No. 1 L. Lynn, C SW SE NE, Section 31-1s-2w, 2 miles southeast of production in the field, logged a series of sands showing oil between 1,720 feet and 2,042 feet. The total depth of the test is 2,197 feet.

Amos Drilling Co. and others' No. 1 Short, SW cor., Section 18-1s-2w, on the east side of the Tatums Field, is shut down for proration after cementing casing at 1,846 feet. A series of sands showing oil were found from 1,852-2,015 feet. The total depth is 2,067 feet.

Edna Maria Oil Co.'s No. 1 Walker, SW cor. SE NW, Section 22-5-6, in the Conservation Pool, in Pontotoc County, was making 1,500,000 feet of gas after drilling out the cement plug at 1,579-1,710 feet.

Barnsdall Oil Co.'s No. 1 Taylor, C SW NW, Section 17-14-5, Lincoln County wildcat, is to be standardized at 4,690 feet, and the 8-inch casing cemented at that depth. The log shows the Sylvan at 4,553 feet, the Viola lime at 4,638-90 feet.

KANSAS

The wildcat well in the eastern part of Reno County, Kansas, which has been shut down, will be opened and put on production. Shell Petroleum Corp.'s No. 1 Blake, in Section 23-23-4w, is to be produced. It is estimated at 200 bbls. of oil a day and 13,000,000 feet of gas a day. A 4-inch pipe line is under construction from the well southwest to the Skelly Oil Co.'s pipe line.

Midwest Exploration Co.'s No. 29 Allen, in Section 36-22-12w, Stafford County, found the top of the Silicious lime at 3,537 feet and is shut down at a total depth of 3,539 feet to install standard tools. The test will not be drilled deeper until the two other offsets reach the Silicious lime. It offsets the same company's No. 36 Richardson, which is a 1,000-bbl. well.

Vickers Petroleum Co.'s No. 1 Stoltenberg, NE cor. NW, Section 22-16-10w, Ellsworth County, was spudding. It is located about a quarter of a mile south of the Gypsy Oil Co.'s discovery well in the area.

J. Braden and others' No. 1 Sadey, SW cor., Section 18-19-1w, in the Ritz-Canton Pool, in McPherson County, is a new location, and will begin operations in a short time.

Mid-West Refining Co.'s No. 36 Furthermeyer, in Section 25-12-16w, Russell County, was drilling at 3,210 feet after landing casing at 3,180 feet. It is expected to reach the pay horizon in a few days.

Continental Oil Co.'s No. 1 Goodrich, SW cor. NE SW, Section 16-25-1, in the Goodrich Pool, in Sedgwick County, was fishing at a total depth of 3,022 feet. Same company's No. 1 Brown, NW cor. SW, Section 15-25-1, was drilling at 2,500 feet. Same company's No. 1 Smith, NE cor. SE, Section 16-25-1, was drilling in the Kansas City lime at 2,613-14 feet with 200 feet of oil in the hole.

In the Eastborough Pool, Magnolia Petroleum Co.'s No. 7 Wheeler, NE cor., Section 19-27-2, was landing casing on top of the Viola lime at 3,226 feet. The total depth of the well is 3,267 feet.

On the Winfield Townsite, in Cowley County, Knox Drilling Co.'s No. 1 Mattison, C SE NW, Section 22-32-4, found the top of the Silicious lime at 3,285 feet, and was landing 5-inch casing. Roth and Faurout's No. 1 Cavitt, NW cor. SE NE, Section 22-32-4, has been completed for 300 bbls. of oil a day from the Silicious lime at 3,268-75 feet.

In Greenwood County, Harwood Oil Co.'s No. 1 Carson, NW cor. NE, Section 33-22-11, was drilling at 1,650 feet expecting to reach the pay horizon in a few days.

Phillips Petroleum Co. and others' No. 1 Brothers, NW cor. NE NW, Section 35-23-11, Greenwood County, has spudded.

NAME SUBCOMMITTEE ON WELDED OIL TANKS

G. Raymond, of Black-Sivalls & Bryson Manufacturing Co., Kansas City, Mo., has been appointed chairman for 1932 of the subcommittee on welded steel tanks of the American Petroleum Institute's Committee on Standardization of Steel Tanks for Oil Storage. Members of the subcommittee are:

E. E. Dillman, Wyatt Metal & Boiler Works, Dallas, Tex.; E. Stanley Durward, Shell Petroleum Corp., Dallas; W. H. Graves, Columbia Steel Tank Co., Kansas City, Mo.; W. A. Knapp, Butler Manufacturing Co., Kansas City; J. R. McWilliams, Skelly Oil Co., Tulsa; H. M. Staggs, Atlantic Oil Producing Co., Dallas, and F. E. VanWormer, M. & V. Tank Co., Wichita Falls, Tex.

STAFF STAYS AT SARNIA

CHATHAM, Ontario, Feb. 13.—Announcement has been made by Secretary-Treasurer F. E. Holbrook that plans for the transfer of the accounting staff of Imperial Oil, Ltd., from Sarnia to the head office at Toronto have been suspended. Transfer of some 50 families was involved. The accounting department will remain at Sarnia unless considerations of economy later render a transfer imperative.

This reproduction of a photomicrograph shows the interlocking of the flakes of the internal reinforcement used by Barrett. By laminating with the waterproofing agent they give Barrett Pipe Line Enamels unusual tensile strength and toughness.

For pipe of large diameter The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

Backed by 78 years' waterproofing experience . .

Barrett Specification PIPE LINE ENAMELS

Years of experience in waterproofing tunnels, dams, subways and other underground structures enabled The Barrett Company to develop pipe line enamels which withstand severe corrosive conditions. And Barrett Specification Pipe Line Enamels are standardized—any order can be duplicated at any time. Information on pipe protection supplied without obligation.

The Barrett Company

40 Rector Street, New York, N. Y.

Joiner Area Extended 1½ Miles South

Texas Company Gets Good Well on Roan Survey. Crude Stocks Being Drawn Upon to Serve Refiners' Demands

By L. E. Bredberg

DALLAS, Tex., Feb. 15.—The Joiner area, in southern Rusk County, was extended 1½ miles farther south this week when The Texas Company's No. 1 Henry, in the Willis J. Roan Survey, came in making 105 bbls. per hour through three-quarters inch tubing at a total depth of 3,620 feet. The Woodbine sand was topped at 3,614 feet. It is approximately 1 mile north of Stanolind Oil & Gas Co.'s No. 1 Lacy in the J. H. Sparks Survey, which was tested this week, making over 22,000,000 feet of dry gas through casing. Sand in this well was topped at 3,604 feet.

Surface elevation of the Henry well is 355 feet, making top of sand minus 3,259 feet and total depth, minus 3,265 feet.

It will be interesting to see how much farther south oil producers will be completed, and wells now drilled in this area will be closely watched, logs scrutinized, and samples examined to determine the cause of the dry gas area, and discover what has taken place geologically in this part of the field.

The dry gas in the two wells is not being utilized, but will probably be used for fuel for drilling other wells in the area. It was reported that the United Gas Co. would tie into Peyton Brothers' No. 1 Perry 60,000,000-foot gasser, but has not done so to date. The Stanolind Oil & Gas Co. may erect a casinghead gasoline plant on one of its leases in this area, and process the gas taken from its own and surrounding company leases. The company recently acquired a half interest in a large block of acreage in this part of the pool, purchasing it from the Pure Oil Co.

As of Sunday, February 14, the total number of oil wells in the East Texas Field was 4,160; wells reporting production on that day, 1,115; wells shut down for physical reasons, 19; wells failing to report, 170; wells shut down for Sunday, 2,856; average production per well per day, 74.3; Sunday's production 82,888 bbls.

Drawing on Stocks

Withdrawals from storage continue in East Texas, the week ending February 10 showing a daily average of 15,700 bbls. taken from tanks in the district, daily deliveries averaging 342,821 bbls., while production, which was cut to 75 bbls. per well per day, on February 5, fell below the 300,000-bbl. mark, bringing the daily average for the week ending February 10 down to 329,250 bbls., a decrease of over 22,000 bbls. per day from the previous seven days' average. With production again cut back in the district, many operators are wondering why there is no increase in price. The demand is apparently running higher than production in the district now, some of the purchasing companies scrambling for connections after the well limit was set to 75 bbls. per day. The smaller operators desire to know why storage is being emptied, when a couple of weeks ago the companies were against connecting to wells, and many wells were going unconnected until a committee of pipe line and purchasing company men was organized to study the situation and find connections for these wells, if possible.

Another Plan Proposed

The majority of the operators in the district are satisfied with the present method of cutting production by the well method, and have taken the repeated cuts for the good of the industry and themselves, but another plan of well and acreage basis has been proposed, consequently another big proration argument is about to be started over East Texas, a district in which there has been more of such arguments than in any other field yet opened. A smaller allowable for the field is also advocated by a few, but to set the figure at 300,000 or 250,000 bbls. per day, will also bring about complications, many of the operators feeling it unnecessary to curtail this district so stringently.

The present plan of curtailing the production, on the per well basis, may not be the best in the world, and a maximum of 400,000 bbls. per day may be considered as too high for orderly development of the field, but there is a limit to the number of changes that might be asked for from a group of men, and they will eventually balk if pushed too far.

Preparing for Pumping Stage

In a trip throughout the field standard pumping equipment can be seen on hundreds of wells, although not pumping at the present time, the companies merely preparing for the future, and rigging up equipment so that it can be used in agitating the wells to make them flow, shutting them in on Sundays being responsible for many of them staying off of production when opened up, and until agitated by swab or pumping to start them flowing again. Bottom hole chokes are also giving trouble in the field, held responsible for the wells paraffining around 500 to 600 feet from the top of the hole, consequently chokes on tubing are considered as the most practical for use in the field.

Cold weather has not been responsible for the wells paraffining, as is generally the case in other fields, but the method of production is the principal factor in this field. If a well is allowed to make its daily limit in one or two hour's time paraffin is kept down, but if the well is allowed to flow for several hours, pinched in to but a small amount, the rate of paraffining is much higher. This has led to the majority of the operators flowing their wells as rapidly as possible in order to obtain their allowables.

Suggest Unit Operation

A unit plan of operation for the area around Cranfill & Reynolds' No. 1 Rash in the Eubanks Survey, Upshur County, has been suggested by the Arkansas Fuel Oil Co., and a plan offered by that company for controlled development of the area. Operators holding acreage in the area have met to consider the plan, but have not yet made known the outcome of the meeting. Under the Arkansas plan the division of the oil would be based upon the ratio of the volume of the producing sand beneath the entire field, a revolutionary departure from any form of proration used at the present time. The plan would also limit the area to one well on each lease, as nearly as practicable. The lessee would then be allowed to produce his proportion of the daily production of the entire field, based solely upon the ratio of number of acres in the producing lease to the total number of acres in the total producing leases at the time of such completions. A single well would be allowed to produce the total allowable on leases where the length of the lease is not over twice the width, providing the well is drilled in the approximate center of the lease. A lease owner would be allowed to subdivide his lease into tracts and drill one well in the center of each tract, each well allowed to produce the allowable of each tract. In no event will the subdivision allow a well to produce more from a well than its prorata part of the amount the entire lease would be allowed.

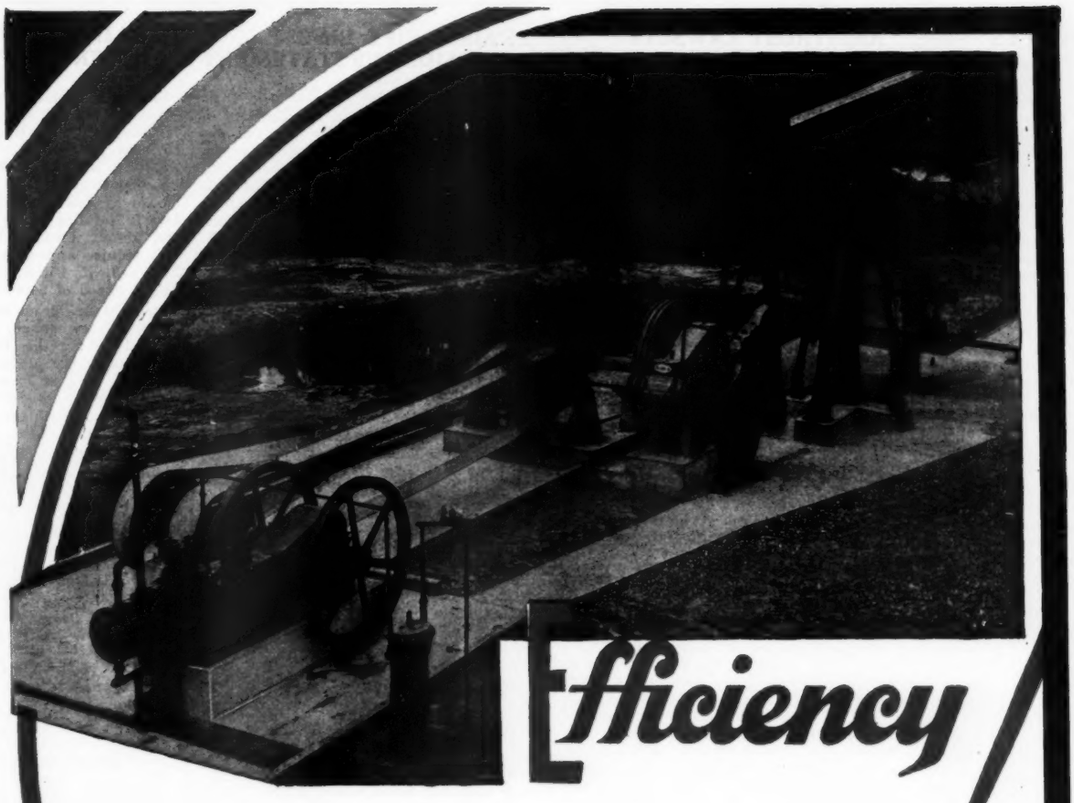
If any lease owner desires to drill a regular location, such well shall only produce as much as though it were located on a 10-ac. tract lease, and each unnecessary offset shall in the same manner produce as though it were on a 10-acre lease. A lease owner who holds a lease which is too small to justify drilling a well for the allowable provided by the plan, such lease owner would be entitled to require an adjacent landowner, who has not yet drilled, to annex the small tract to his own and develop the two tracts as one, the lessee of the attached parcel to secure his prorata of the eight-eighths upon contribution of his share of the cost of the actual drilling, equipping and operating in a reason-

(Continued on Page 85)

EAST AND EAST CENTRAL TEXAS WILDCATS

Week Ending February 15

Company, well, farm name, section and block—	Remarks:
ANDERSON COUNTY	
C. R. Wilmuth et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in S½ of 129-ac. tract, M. Main Sur.	S.D. 1,530 ft.
ANGELINA COUNTY	
Helburt et al's No. 1 Long Bell Lumber Co., 150 ft. from S line and 200 ft. from E line of Sec. 9, H.&T.B. Sur.	Location.
BOWIE COUNTY	
Logan and Elliott's No. 1 J. W. Smith, 9,600 ft. S and 2,500 ft. W of NE cor. of survey, Chas. Lewis Sur.	S.D. 4,503 ft.
W. S. Langford's No. 1 W. W. Whybark, 200 ft. from S and W of SW cor. of J. A. Dyer Sur.	S.D. 1,880 ft.
Lee Timberlake et al's No. 2 Julius N. Tidwell, 655 ft. from E and 2,510 ft. from S of survey in L. M. Rice Sur.	S.W. on D.S. test; S.D. 3,012 ft.
CAMP COUNTY	
Monitor Oil Co.'s No. 1 G. L. Merrill, 3,400 ft. from N line and 6,900 ft. from W line of survey, E. Mathews Sur.	Drlg. 250 ft.
CHEROKEE COUNTY	
Bridges and Candler's No. 1 Berryman, center of Berryman tract, H. Kimble Sur.	S.D. 1,000 ft.
Denman et al's No. 1 Mrs. Renfroe, 330 ft. N of S line and 330 ft. E of W line of farm, Uriah Moore Sur.	Derrick.
Harper and Perkinson's No. 1 J. T. Lowery, 650 ft. from N line, 150 ft. from W line of Blk. No. 8 on a 139.6-ac. tract, 4 miles W of Troupe, C. B. Jennings Sur.	Rigging up.
Merry Bros. and Perini's No. 1 Annie Kelley, 330 ft. from N line and 443 ft. from E line of 393-ac. tract and 90-ac. lease, M. De Los Santos Coy Sur.	Location.
Wilson & Stubbs' No. 1 L. Robart, 450 ft. from S and 150 ft. from W line of lease, J. B. Wolfin Sur.	S.D. 2,035 ft.
DALLAS COUNTY	
Long Creek Dev. Co.'s No. 1 T. J. Lupton, center of 160-ac. tract, 3½ miles N of Mesquite, J. Johnson Sur.	Rigging up.
Paris' No. 2 Wilkinson, 2,787 ft. from NW and 3,241 ft. from SW of John P. Anderson Sur.	T.D. 1,230 ft.; S.D.
Joe Wilson's No. 1 fee, 600 ft. from N line and 600 ft. from W line of 1,500-ac. tr., Jno. Scroggs Sur.	S.D. 1,150 ft.
DELTA COUNTY	
Worthington et al's No. 1 Pejernett, 776 ft. from S and 150 ft. from W in E. Chick Sur., 1½ miles W of Horton	S.D. 3,315 ft.
ELLIS COUNTY	
Clark-Brooks' No. 1 C. W. Golliday, 300 ft. from S line and 300 ft. from E line of tract and survey, John Bones Sur.	T.D. 2,140 ft.
E. M. Rogers' No. 1 John Lee Winn, 1,650 ft. from E and 150 ft. from S of Orland, Orlo Wheeler Sur.	S.D. 1,435 ft.
Worthen Pet. Co.'s No. 1 Cerf, 2½ miles NE of Ennis.	T.D. 2,264 ft.
FRANKLIN COUNTY	
Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tr., W. M. Dawson Sur.	Derrick.
GREGG COUNTY	
Abernathy & Kirkpatrick's No. 1 R. M. Wood, center of Lot No. 3, R. H. Hokit Sur.	Location.
Atlantic Production Co.'s No. 1 A. V. Bacle, 330 ft. from N and E lines of lease, G. W. Hooper Sur.	Drlg. 2,959 ft.
Barnsdall Oil Co.'s No. 1 Grant Benson, 330 ft. from S and E lines of 50-ac. tr., W. P. Chisum Sur.	Location.
Barnsdall Oil Co.'s No. 1 Adams, 330 ft. S and E of NE cor. of Shell's Slaton lease, G. W. Hooper Sur.	Location.
Beard et al's No. 1 J. J. Fuller, 330 ft. from S and W lines of 69.7-ac. tract, M. Alexander Sur.	Rigging up.
Brown et al's No. 1 Florence, 150 ft. from N and W lines of 2.58-ac. tract, Mary Van Winkle Sur.	Set surface csg.
Will Brown's No. 1 E. Choice, 400 ft. due east of Collins' No. 1 H. T. Elder	Derrick.
Bob et al's No. 1 T. L. Broy, 290 ft. from E and 1,640 ft. from S of H. A. Holdt Sur.	Derrick.
M. T. Beeler's No. 1 Finley and Thomas, 150 ft. from N and 150 ft. from W of 10-ac. lease, C. H. Alexander Sur.	Derrick.
Byrd-Frost Oil Co.'s No. 1 Alexander and Strong, 330 ft. from S and E lines of 26-ac. tract, M. Tennison Sur.	Derrick.
Central Com. Oil Co.'s No. 1 A. A. King, 233 ft. from S and 320 ft. E of NW cor. of 133-ac. lease, M. Tennison Sur.	Top sand 3,709 ft.
E. L. Chapman's No. 1 J. Clayborn, 275 ft. S and 158 ft. W of NE cor. of 4-ac. lease, I. Baty Sur.	Rigging up.
Danciger Oil & Ref. Co.'s No. 1 S. Ball, located on a 2-ac. tract, Mary Van Winkle Sur.	Derrick.
Demotte et al's No. 1 T. L. Bray, center of Blk. No. 8, H. R. Hokit Sur.	Location.
Dodd and Markey's No. 1 J. F. Holt, 615 ft. E and 797 ft. N of SW cor. of 200-ac. tract, H. Edwards Sur.	Derrick.
W. L. Duninger's No. 1 C. C. Stoen, 350 ft. from S and E lines of 59-ac. tract, J. Baty Sur.	Derrick.
East Texas Refining Co.'s No. 1 Tom Christian, center of lease, G. W. Hooper Sur.	Rigging up.
F. H. E. Oil Co.'s No. 1 J. M. Christian, 330 ft. from S line and center of E and W lines of E 7.5-ac. tract, G. W. Hooper Sur.	Waiting on cmt. to set; T.D. 3,589 ft.



Efficiency

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LUFKIN UNITS

Pipe Line Construction News

LINE TO LOUISVILLE UNDER NEGOTIATION

GLASGOW, Ky., Feb. 15.—Guy C. Bell, in the Glasgow Daily News, says if pending negotiations are completed a Glasgow enterprise will soon be selling 10,000,000 feet of natural gas daily to Louisville. The parties involved in the negotiations are the Consolidated Utilities of Kentucky with headquarters in Glasgow and the Louisville Gas & Electric Co., public service organization of Louisville. The basis of the proposed agreement is 10,000,000 feet of gas to be delivered into the mains of the Louisville company at West Point, Ky., every day in the year except during the months of July and August. The basis of the wholesale price is not known but the Consolidated pays 12 cents per 1,000 feet for natural gas collected from the casinghead wells in the Center Field of Metcalf County and in other districts where it has contacts with gas properties.

The Consolidated Utilities owns a developed production of 31,000,000 feet of gas in the Center Field and has recently acquired several thousand acres of partially developed gas property in Grayson County. It has franchises for consumers delivery in a dozen or more towns in south Kentucky and in these communities delivers to many public and private commercial customers, court houses, schools, grain mills, oil refineries and small industrial plants.

At present it has a 6-inch pipe line extending to Shepherdsville, a distance of only 12 miles from West Point. It will thus be observed that the delivery of the additional gas to Louisville could be effected within a short time by the construction of the 12 miles of line. If the deal is consummated, as appears assured, the local company will use 8-inch pipe in its extension.

The service in Glasgow has resulted in the installation of 750 meters and the Consolidated officials expect the consumers' contracts to reach 1,250 during the next year. The ultimate meter service for domestic and commercial use in Glasgow, based upon normal increase in population for the next two years, is 1,750 outlets.

PLAN ANOTHER LINE IN IRAQ OIL FIELD

NEW YORK, Feb. 15.—The Iraq government has concluded negotiations with the British Oil Development Co., giving the latter a concession to exploit the zone west of the Tigris River, according to cables from Jerusalem. The British Oil Development Co. is made up of British, German, Italian and Swiss interests, and has been endeavoring for more than a year past to secure concessions in Iraq.

In earlier negotiations with the Iraq government, British Oil Development Co. had promised immediate construction of a pipe line to the seaboard, and it was the influence of this factor, as well as French insistence, which was largely responsible for speeding up the pipe line construction plans of Iraq Petroleum Co. last year, it is believed.

EUREKA PIPE TO OIL CITY

The production and run department of the Eureka Pipe Line Co. which has maintained offices in Pittsburgh, Pa., for a number of years will be moved to Oil City, Pa., according to a recent announcement by company officials. The new headquarters are expected to be opened on April 18 and the change will move 10 Pittsburgh families to the new location. D. L. Thomas will continue as agent and be in direct charge.

ANTITRUST LAWSUIT OVER NATURAL GAS LINE

NEW YORK, Feb. 15.—A summons has been filed in federal court in a suit for $75,000,000 brought under the Sherman antitrust law by the Missouri-Kansas Pipe Line Co. against Henry L. Doherty, individually and trading as Henry L. Doherty & Co., the Standard Oil Co. of New Jersey, North American Light & Power Co., Christy Payne, a director of the Standard Oil Co. of New Jersey, and Louis E. Fischer, vice president and one of the directors of the North American Light & Power Co.

The papers filed assert that the plaintiff had been damaged to the extent of $25,000,000 by acts of the defendants in violation of the antitrust law, under which law triple damages are requested.

WASHINGTON, D. C., Feb. 15.—Additional suits against some of the defendants named by the Missouri-Kansas Pipe Line Co. in its plea in New York for $75,000,000 damages were predicted in a statement issued here under the name of Frank P. Parish, president, and the directors.

CANADA HAS RUMOR ABOUT NEW GAS LINE

British capital to the extent of $20,000,000 is available for a gas pipe line to serve Saskatchewan cities, the Calgary Oil Examiner is informed by an oil man who has been interested in development work in Alberta for a great many years, but who is at present at Vancouver. The letter states:

"I have for quite a number of years been interested in the gas possibilities of Fraser Valley. My activities in this has brought me in touch with an old friend of mine, a pipe line engineer who came to Vancouver and Pacific Coast cities looking over the possibilities of pipe lines here. Last summer on meeting him I suggested to him that he might interest his principals in the possibility of pipe lines from Alberta points to Regina, Saskatoon, and Winnipeg.

"I gathered considerable data which I have supplied him from time to time and as a consequence he has interested his people to a point where they agree to finance a pipe line up to $20,000,000 in Canada on his recommendation and further agree should such a project run into more money they would arrange further financing through their associates provided that the supply of gas and the potential market was assured and warranted any such investment."

REGINA GAS FRANCHISE

CHATHAM, Ontario, Feb. 13.—Announcement is made that the Regina, Saskatchewan, city council has decided to consider natural gas propositions from other companies unless the Power Corp. of Canada, which now holds a tentative franchise, promptly completes an agreement. Independent operators in the Turner Valley Field some time ago approached the Regina council with a view to piping gas from that field. The Power Corp. of Canada planned to pipe gas from the Bowdoin Field in Montana.

GREAT LAKES OFFICES

KANSAS CITY, Mo., Feb. 15.—The Great Lakes Pipe Line Co. will open permanent general offices March 5 in the Bryant Building here. In a 10-year lease closed yesterday the pipe line corporation will occupy the fifteenth floor and part of the basement and sixteenth floor in the structure.

The temporary offices for the last year have been at Fairfax Airport.

PRAIRIE PIPE LINE PRESIDENT'S STATEMENT

NEW YORK, Feb. 15.—Prairie Pipe Line Co. has issued to stockholders a letter defending the merger plan. In his letter to stockholders, W. F. Gates, president, quotes a financial statement as of November 30, 1931, showing that the company on that date had an operating deficit of $2,385,802 for the 11 months ended on that date and had a net loss of $547,313 before nonrecurring items of income tax refunds and back interest. He estimates that a further net loss of $120,000 was incurred during December, making a total net loss of close to $670,000 for 1931.

"During the year," he said, "the company obtained income tax refunds for the years 1915 to 1928, inclusive, which together with interest thereon amounted to $3,670,530. Accordingly after dividends of $6,075,000 paid during the year, the net reduction in surplus at the end of the year was approximately $3,060,000. Operating revenue for the 11-month period was $10,267,994, as compared with operating revenue for the similar period of 1930 of approximately $29,400,000 and in 1929 of approximately $36,600,000.

"The outlook for the future is even less promising than it was in 1931. In January of this year the deliveries of crude over the lines of your company averaged only approximately 60,000 bbls. a day, as compared with an average of about 86,000 bbls. in 1931, 164,000 bbls. in 1930, and 215,000 bbls. in 1929.

"The result for 1931 and the outlook for the future under separate operation confirm your directors in the view that your company must either acquire production and refining and marketing facilities or combine with other companies having such production and facilities."

Mr. Gates states that it is not practicable to acquire facilities through purchase, while refinery construction and the building up of other needed facilities would be uneconomical and prohibitive in cost. Liquidation likewise is impracticable because it would occasion tremendous loss of intrinsic values, he said, and would mean the termination of the business as a going concern with all of the sacrifices that such termination would entail.

Defending the terms of the Sinclair merger, Mr. Gates points out that after the exchanges arranged become effective they will own 40 per cent of the common stock of the consolidated company. "The proposed ratios of exchange," he said, "give due recognition to current position. The book value of your company's stock May 31, 1931, was $32 a share; that of Prairie Oil just under $36 a share, and that of the common stock of Sinclair just under $34 a share."

In concluding, Mr. Gates urges stockholders to approve the merger, pointing out that under Kansas law approval of 80 per cent of the stock is required.

LYCOMING LINE PROGRESS

ELMIRA, N. Y., Feb. 15.—The Lycoming Natural Gas Co., a subsidiary of the Standard Oil Co. of New Jersey, has completed 62 of its 100 miles of 20-inch natural gas pipe line from the Tioga Field or northern Pennsylvania to the city limits of Syracuse, N. Y. The entire line will be completed and ready for operation early this spring. Arrangements have been made with the Syracuse Lighting Co., a unit of the Niagara Hudson Power Corp., whereby the Syracuse company will purchase the output of the new line, mixing the natural gas with its artificial product for distribution in Syracuse and surrounding communities.

OIL LINE TO MUSKEGON FROM MT. PLEASANT

MOUNT PLEASANT, Mich., Feb. 13. There is talk of the laying of a 4-inch oil line from the Mount Pleasant Field to Muskegon for an outlet for the crude produced in the Central Michigan Field. The construction of the line was discussed by John Borden, head of the Old Dutch Refining Co. and an operator in the Mount Pleasant-Midland Field. It will require approximately 100 miles of line and, if 4-inch, would cost in the neighborhood of $400,000.

"An oil line from the Mount Pleasant Field, if large enough, could not only furnish crude for the Muskegon refineries but it also would be possible to ship crude oil by boat from Muskegon to the Chicago refinery district at a market saving compared with the all-rail rate," Mr. Borden says.

The Old Dutch Refining Co. owns a loading dock at North Muskegon and a pipe line from its plant east of the Muskegon city limits to the dock on Muskegon Lake.

There is also talk of a natural gas line from the Mount Plasant area to Muskegon, which would require from 3,000,000 to 4,000,000 feet a day, with the expectation of being able to get the natural gas from the Broomfield Township, Isabella County, wells, approximately 12 miles west of Mount Pleasant. If this line is put in there are many towns and cities along any route from the gas field to Muskegon.

PILOT BUTTE LINE

CASPER, Wyo., Feb. 13.—Illinois Pipe Line Co., affiliated with the Ohio Oil Co., has filed a petition with the Wyoming Public Service Commission to abandon 29.3 miles of 3-inch pipe line from the Pilot Butte oil field in Fremont County, Wyoming, to Riverton, Wyo. The line was completed early in 1918. For several years after its completion, the line was operated steadily averaging about 1,500 bbls. daily. For the past few years, it has been operated only a few weeks each year.

The application has been protested by citizens in Riverton, the superintendent of the Indian reservation, the Kinney Coastal Oil Co. and the Argo Oil Co. Hearing on the protest will be held some time in March.

WYOMING PIPE LINE TAXES

CASPER, Wyo., Feb. 13.—The Wyoming State Board of Equalization held a hearing on February 9 in Cheyenne to consider the valuations of the pipe lines in the State for taxation purposes. There were some 20 pipe line companies represented at the hearing, asking a reduction in 1932 from the 1931 valuation of $10,214,170. The board issued a statement saying that it believed that a more equitable system of valuing pipe lines and tankage for assessment purposes should be put into effect this year and had concluded that the proper basis to be used is "reconstruction cost new, less depreciation" by the year.

DETROIT GAS LINE

DETROIT, Mich., Feb. 15.—Negotiations are in progress between the United Light & Power Co., parent organization of the Detroit City Gas Co., and the Columbia Gas & Electric Corp. to bring natural gas to Detroit, according to Charles W. Bennett, vice president and general manager of the Detroit City Gas Co. Columbia Gas & Electric Corp. distributes gas through Ohio, Indiana and eastern states.

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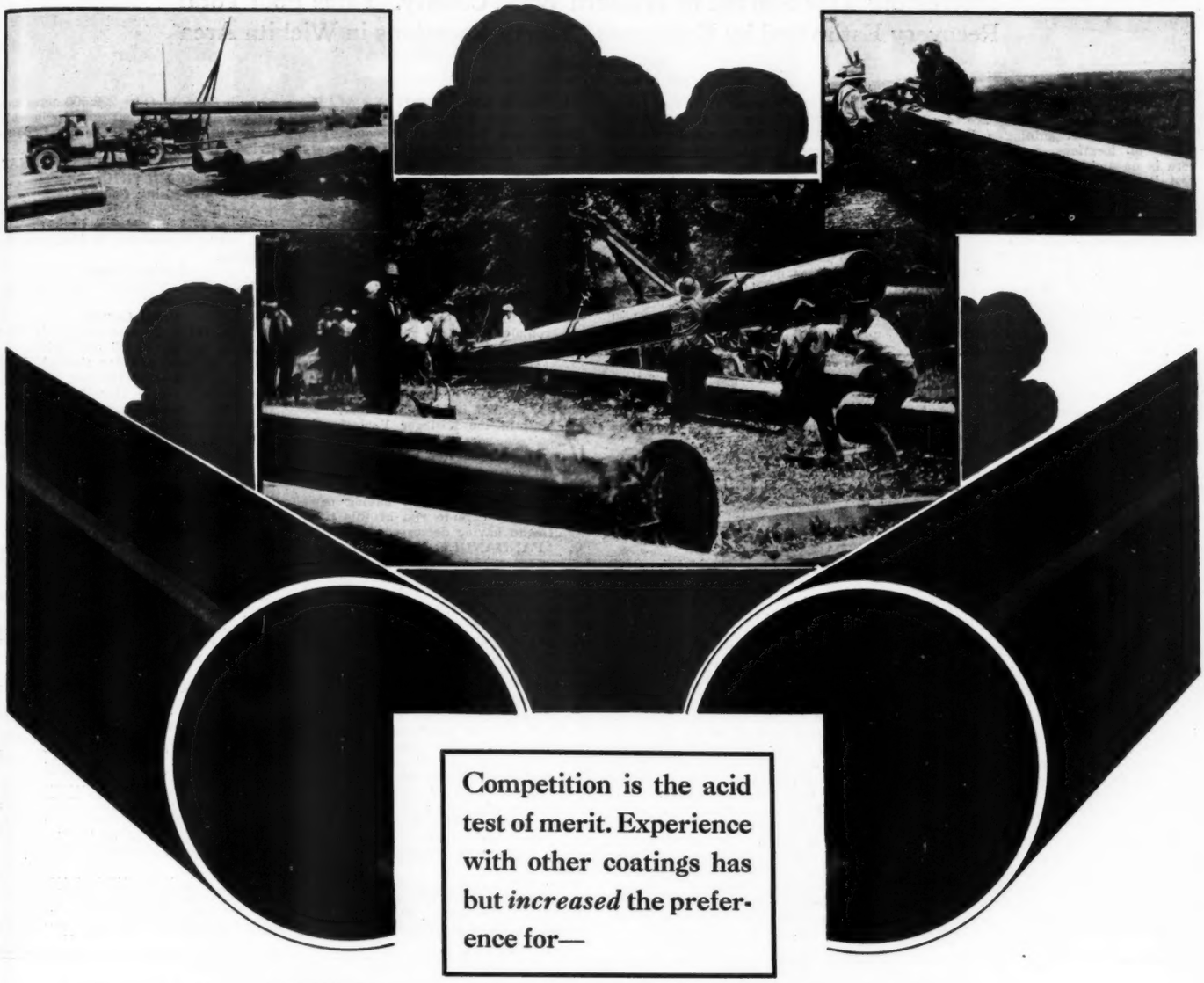

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New Locations in West and North Texas

Interesting Test Started in Western Ward County. Yates Pool Total Recovery Estimated by Engineers. Thirty Locations in Wichita Area

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 15.—West Texas is holding to a steady pace in activities, the district gaining a little in number of locations and completions. There is no one well of outstanding interest in the Basin except Weekly Oil Corp., Casteel and McCurdy's No. 1 Cowden in Ector County, which has had its share of fishing jobs, and encountered still another one this week when cleaning out 100 feet off bottom, gas blowing tools up the hole again, breaking the line and letting tools drop back to the bottom which is standing at 3,940 feet. It is now fishing for the tools.

Two locations were staked in Howard County this week, one in Loving, one in Pecos and one in the McElroy Pool of Crane County. Ward County, which continues to be the most active county in the Basin, had three completions and Fisher County one.

Interesting Test

The Plains Producing Co. and Simms Oil Co. are building derrick for an interesting test on the Benton Land Co.'s. acreage in Section 26, Block 1, W. & N. survey, approximately 2½ miles northwest of Shipley and others' No. 1 Monroe, the Delaware discovery well of Western Ward County. Simms Oil Co. owns the acreage under the new test, and the Plains Producing Co. is a new company recently organized in Dallas to drill in the Permian basin. This new test is in the trend between the Monroe discovery and the Wheat Pool, Loving County, which is producing from the Delaware sand, and is approximately 13 miles to the northwest of the Monroe producer.

Eastern Howard

L. C. Harrison's No. 1 Denman in Section 10-1s, Block 30, T. & P. survey, Eastern Howard County, which came in two weeks ago, was connected by the Col-Tex Refinery of Colorado, Texas. Tubing is now being run in the well preparatory to putting it on the pump. It has produced over 1,300 bbls. since it came in, and the refining company has taken about half of this amount from the tanks. Total depth is 2,807 feet, and the pay was logged at 2,807 feet.

Ward County

Eppenauer's No. 1 Purcell, approximately midway between the Penn-Atlantic-Bennett producers to the northwest and Kugle's No. 1 Wallace and Postelle's No. 1 Monroe to the southeast, obtained an increase in oil from 2,683-84 feet, and another from 2,694-95 feet, and is drilling ahead at 2,740 feet in lime, rated good for 30 bbls. daily while bailing. The oil is swabbed down, and drilling continues. Deeper drilling may strike an increase in oil pay, but if not, it will make a small producer under present conditions tying the aforementioned two producing areas with production, consequently an interesting well for this part of Ward County.

Stanolind Oil & Gas Co's. No. 1 Weiss in Section 4, Block 34, H. & T. C. survey, to the north of production in the Barker area, Ward County, plugged back from 2,415 feet to 2,383 feet and is now testing. It had a showing of oil and gas from 2,282-92 feet, and an increase in both from 2,325-30 feet. It formerly produced approximately 190 bbls. in a day and a half, and marks another extension for this area in which the wells have been small and scattered, but promise to link considerable acreage by production.

Irion County

The two deep tests in Irion County are drilling ahead: Plymouth Oil Co's. No. 1 Sugg in Section 3,081, Block 28, H. & T. C. survey at 6,215 feet in hard lime and Stanolind Oil & Gas Co's. No. 1 Williams in Section 1,196, T. T. survey coring at 7,115 feet in black shale.

Yates Pool Reserve

Petroleum engineers who have been studying the Yates Pool, Pecos County, have estimated that it would flow 14 more years, under orderly development as practiced in the past and with the aid of repressuring. The pool has produced nearly 137,000,000 bbls. from October, 1926 to January 1, 1932. During the next 14 years they have estimated that it would flow an additional 312,000,000 and then pump another 155,000,000 bbls., making total recovery in the neighborhood of 604,000,000 bbls.

Daily allowable of the field is now 65,000 bbls., from 402 wells, and under a 4,731,270 bbl. daily potential.

RANGER AND WICHITA FALLS

There were two locations in Brown County, one in Coleman, one in Palo Pinto and three in Shackelford County, in the Ranger district this week, with over 30 locations being staked in the Wichita Falls district, Young County having the majority of these while Archer and Wichita County followed next in order.

Deep Oil Development Co. and Lindsay Drilling Co's. No. 2 Wilson in the southeastern part of the Chalk Hill Pool. Archer County was the feature of the Wichita Falls district this week when it was completed for a good well at a total depth of 2,217 feet, after logging oil sand from 2,207-2,211 feet and 2,212-17 feet. The well is in Block 119, A. T. N. C. survey, and was estimated good for around 1,000 bbls. per day.

A well in the Kisinger Pool, in the southeastern part of Young County, is again shut in or flowing under proration rules after having flowed open for the past several months, the pipe line companies taking this oil having more oil than they care to run at this time, the demand having decreased.

PANHANDLE DISTRICT

There were four locations staked in this district during the week; one in Hutchinson County, two in Moore and one in Gray County, the gas areas being the most active at the present time, with gas companies drilling for a larger and continuous supply of gas for their large lines running to northern and eastern cities.

Almost 500,000 acres of leases have been allowed to revert to the landowners in the district, as has been the case in practically all other districts in the state this year, with the exception of East and South Texas where activities have been the heaviest and possibilities considered the best for wildcatting during the year. Over 1,500,000 acres of leases were turned back in West Texas, or the rentals reduced in order to keep the leases.

Over 43,000 acres were relinquished in Carson County, 40,620 acres in Gray, 40,000 acres in Moore, 29,835 acres in Hutchinson, 26,210 in Wheeler and 7,300 acres in Potter. Over 292,500 acres were relinquished in adjacent counties in which there has been and will be but little activity during the next year or two.

COMPLETIONS IN WEST TEXAS DISTRICT

Fisher County

Cranfill & Reynolds' No. 1 Sipe, total depth 3,140 feet, plugged back to 3,112 feet, initial production 8 bbls. per day pumping.

Loving County

Cromwell and others' No. 1 Russell, location abandoned.

Ward County

Alpine Oil & Development Co.'s No. 4 Boogher, top pay 2,155 feet, initial production 35 bbls. per day through 2-inch tubing, total depth 2,444 feet. Gulf Production Co.'s No. 9 Hutchings, top pay 2,565 feet, initial production 180 bbls. with 1,000,000 feet of gas, total depth 2,750 feet; No. 20 O'Brien, top pay 2,624 feet, initial production 140 bbls., total depth 2,660 feet.

Daily average oil shipments from West Texas week ending February 4:

SHIPMENTS THROUGH MAIN TRUNK LINES

Company, size and location—	Bbls.
Atlantic P. L. Co., 10-inch, Houston	18,470
Gulf P. L. Co., 8-inch, Ranger	.....
Humble P. L. Co., 2 and 8-inch, San Angelo	34,980
Humble P. L. Co., 12-inch, Station "A"	48,469
Illinois P. L. Co., 2 and 8-in., Del Rio	25,120
Magnolia P. L. Co., 8-in., De Leon	4,327
Shell P. L. Corp., 10-in., Houston	24,723
Shell P. L. Corp., 10-in., Cushing, Okla.	29,124
Texas P. L. Co., 12-in., Houston	16,184
Total	201,397

SHIPMENTS TO REFINERIES

Col-Tex Ref. Co., Colorado	6,000
Concho Ref. Co., San Angelo	150
Cosden Ref. Co., Big Spring	6,269
Continental Ref. Co. (Signal), Santa Rita	200
Gulf Ref. Co., Sweetwater	3,151
Lockhart Ref. Co., El Paso	1,976
Marathon Ref. Co., Del Rio	1,275
Paso-Tex Ref. Co., El Paso	4,500
The Texas Company, El Paso	1,000
Wickett Ref. Co., Wickett	350
Total	24,871
Tank car shipments	.....
Total daily average distribution	226,268
Daily average production West Texas (including Lea County, N. M.)	209,548
Daily average from storage	16,738

WILDCAT OPERATIONS IN WEST TEXAS

Week Ending February 15

ANDREWS COUNTY

Company, well, farm name, section and block— Remarks—

Fuhrman Pet. Co.'s No. 1 Boner, 1,320 ft. from N and 440 ft. from W, Sec. 24, Blk. A-43, P.S.L. ..... Drlg. 425 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur. ..... S.D. 1,935 ft.

E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 3, G.C.&S.F. Sur. ..... S.D. 1,302 ft.

Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur. ..... S.D. 2,900 ft.

Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 miles south Alpine ..... S.D. 1,750 ft.

COCHRAN COUNTY

Penn Oil Co.'s No. 1 Slaughter, C Labour No. 80 of League 129, Carson County School Lands ..... T.D. 5,052 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E, Sec. 163, T.&N.O. Sur. ..... S.D. 1,055 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Ferner, 2,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur. ..... Spudded and S.D.

CULBERSON COUNTY

Harris-Hann's No. 1 Seay, 1,980 ft. from N and E of Sec. 16, Blk. 54, P.S.L. ..... Location.

Kornrumpf et al's No. 1 Garen, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land ..... S.D. 1,280 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW, Sec. 46, Blk. M, E.L.&R.R. Sur. ..... To resume drilling.

ECTOR COUNTY

Weekly Oil Corp. et al's No. 1 Cowden, 1,980 ft. from N and W, Sec. 32, Blk. 43, Twp. 3s, T.&P. Sur. ..... S.D. 3,947 ft.; fishing tools.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur. ..... S.D. 3,280 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 254, S.P. No. 7,247 ..... S.D. 2,152 ft.

(Continued on Page 70)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending February 15

BRISCOE COUNTY

Company, well, farm name, section and block— Remarks:

Humble Oil & Refining Co.'s No. 1 C. Adair estate, 2,500 ft. from N line and 2,100 ft. from E line of Sec. 7, Blk. G-6 ..... Building road.

CARSON COUNTY

Continental Oil Co.'s No. 4 Block, 330 ft. from N, 990 ft. from E, Sec. 111, Blk. 4, I.&G.N. Sur. ..... Drlg. 1,331 ft.

H. A. M. Oil Co.'s No. 2 Cooper, 330 ft. from S and E, Sec. 5, Blk. 9, I.&G.N. Sur. ..... Location.

Texhoma Nat. Gas Co.'s No. 1-G Gore, 1,320 ft. from S and 1,327 ft. from W, Sec. 42, Blk. 4, I.&G.N. Sur. ... Running csg. 890 ft.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur. ..... S.D. 2,508 ft.

Downey et al's No. 1 Beasley, SE cor. SW SE, Sec. 95, Blk. 15, H.&G.N. Sur. ..... Rigging up.

DEAF SMITH COUNTY

Western Union Oil Co.'s No. 1 Farwell, C NW, Sec. 18-3n-2e ..... S.D. 275 ft.

GRAY COUNTY

Hack & Barber's No. 1 Back, 660 ft. from S and 330 ft. from W, Sec. 140, Blk. 25, H.&G.N. Sur. ..... S.D. 1,350 ft.

Boyes et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur. ..... Spudded and S.D.

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... S.D. 2,720 ft.

Danciger O. & R. Co's No. 3 Byrum, 330 ft. from N line, 330 ft. from E line, Sec. 183, Blk. 3, T.&N.O. Sur. .. Cemented csg. 1,134 ft.

R. B. Etter et al's No. 1 Chapman, 275 ft. from N line and 110 ft. from W line of S half SW Sec. of Blk. 26, H.&G.N. Sur. ..... Cellar.

Gulf Oil Corp.'s No. 1 Catlin, 2,310 ft. from N line, 330 ft. from E line, Sec. 27, Blk. 3, I.G.N. Sur. ..... Drlg. 1,050 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ..... S.D. 3,010 ft; cleaned up fishing job.

(Continued on Page 71)

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GAS CONSERVATION LAW OF TEXAS IS UPHELD

(Continued from Page 18)

contention that the statutes bear so hardly and unjustly upon it as to deny it due process, or whether defendants, are right that the statutes assailed by plaintiff are valid conservation measures, the violation of which cross plaintiffs are entitled to have enjoined. The facts are stipulated; they are without dispute. From them it appears that plaintiffs, more than two years ago, constructed at a cost of several hundred thousand dollars a modern gas extracting plant, and has been operating it continuously since in a competent and effective manner. That its supply of gas is obtained from owners and operators of wells under contracts substantially alike in terms. These contracts obligate plaintiff to buy certain quantities of gas at a price fixed on the basis of its gasoline content, to extract that content and to turn back to each seller sufficient residue gas to operate its properties. They further provide that if plaintiff should sell the residue gas it will divide the proceeds with its vendor.

Waste of Gas

These contracts contemplate that if the gas is not sold it will be released and discharged into the air, the proof being that there is no way to use the gas in the extraction plant and that unless it may be used for some other purpose the necessary result of the operation of the plant is to blow it into the air. None of the residue gas has, during the more than two years operation, been sold. It has to the extent of 46,000,000,000 feet been blown away into the air. Before being blown into the air and wasted, each 1,000 feet of gas yields .34 of a gallon of gasoline, with the result that one-twenty-fourth of its heat units are conserved, twenty-three-twenty-fourths is wasted. It was stipulated that "the residue gas can be utilized for light, fuel or power for domestic, industrial or manufacturing purposes in its condition as produced at the wells or after the gasoline content has been extracted." It was further stipulated that "95 per cent of the gas produced in Texas contains an extractable quantity of gasoline, and there is a market in the state for some residue gas, no market at this time existing, however, for the residue gas from plaintiff's plant because of conditions in the territory, unless the Common Purchaser Act of the first called session of the Forty-first Legislature can be made effective."

There was some testimony that at one time the wells produced a small amount of oil, but tests made the week before the trial showed no oil produced from any of them. That operated in accordance with the standard method of production as fixed by the commission's orders that they should not run on open flow but on 50 per cent capacity, they would produce no oil. We conclude then, that to all intents and purposes the wells in question are gas wells, and not oil wells; are wells producing natural gas only.

The statutes prohibit the use of gas as plaintiff uses it. Article 6008 provided that "any party or person in possession of a well producing natural gas only, in order to prevent said gas from wasting by escape, shall within 10 days after encountering such gas confine said gas within the well until it shall be utilized for light or fuel; provided, however, the commission may permit the use of such gas for the purpose of being introduced into an oil or gas bearing strata in order to maintain or increase the rock pressure or otherwise increase the ultimate recovery of oil or gas from such strata, and for any other purpose which from the circumstances surrounding each particular case, may be found by the commission after hearing to be practical and conducive to the public welfare.

Waste Construed

Article 6014 after providing "Neither natural gas nor crude petroleum shall be produced, transported, stored or used in such manner or under such condition as to constitute waste" declares "As used herein the term 'waste' in addition to its ordinary meaning, shall include (e) the wasteful utilization of natural gas, provided, however, the utilization of gas from a well producing both oil and gas for manufacturing gasoline shall not be construed to be waste (j) the escape into the open air of natural gas, except as may be necessary in the drilling or operation of a well."

Plaintiff denounces these statutes and the actions of the commission in undertaking to prevent the taking of the gas from the wells from which plaintiff receives its supply for such wasteful uses as plaintiff engages in, as depriving it of its property without due process in that though it is not an owner or operator of a well it has contracted with such operators and that should the commission under color of the statutes prevent its contractors from delivering its supply its plant would be ruined and its property taken. That in short, though the pressure of the statute is not directly applied to it, but only indirectly through pressure upon persons having contractual relations with it, such pressure is as effective to deprive it of its property, and as clearly within constitutional prohibitions as though it were directly applied. Truax vs. Raich, 239 U.S. 33.

It attacks Article 6008 as invalid (1) because it undertakes to confine plaintiff's gas in the ground and prevent its using it except for light and fuel, in the face of the fact that there is no present market for gas for such purposes, and (2) because the statute is invalid as containing a delegation to the commission of power to suspend the law.

As to the prohibition in Article 6014 invoked by defendants against it, it contends that the statute is invalid, as it deprives the owner of property having no characteristics which subject it to public control, of his liberty to deal with it free from such control.

State's Right to Conserve

Plaintiff concedes that oil and gas constitute natural resources, and that the state has the right to prevent wanton and reckless waste thereof. It asserts that this right does not extend to directing or limiting the uses to which gas and oil may be put. It seeks to differentiate a long line of federal cases, beginning with Ohio Oil Co. vs. Indiana, 177 U. S., culminating in Bandini Petroleum Co. vs. Superior Court of the State of California, —— U.S. ——, affirming the right of the state to control, for the purpose of protecting from waste, the uses of its natural resources of oil and gas by the claim that matters stand differently in this state than in those, because oil and gas is held here under a different kind of title.

We do not agree with plaintiff that the fact that the rule in Texas which recognizes the ownership of oil and gas in place, and gives to the lessee a determinable fee therein, (Waggoner Estate vs. Sigler Oil Co., 19 S.W. 2nd 27, Cosden Oil Co. vs. Scarborough, —— Fed. [2nd] ——) operates at all to deprive the state of the power to conserve its natural resources, or limit the reasonable exercise of that power.

Conservation Upheld

We are not in doubt that both upon considerations of securing and preserving the correlative rights of persons in property, though owned by them, of the shifting and fugacious kind which oil and gas are, and upon considerations of conserving the natural resources of the state, ample power exists in the legislature to prevent the wasteful utilization of oil and gas, and to regulate and control their production and use in such reasonable way as to bring about their conservation, and to prevent their dissipation by waste. We therefore reject all of plaintiff's contentions against the statutes founded upon legislative want of power, and address ourselves to a consideration of the question whether the legislature has clearly and in a reasonable way undertaken to exercise that power. We think it has.

We find in the enactment of Article 6008 requiring persons discovering gas in order to prevent its waste by escape, to confine it and providing for inquiry by the commission into the propriety of an authorization, if found, of other uses, neither unreasonable exertion or prohibited delegation of legislative power. This article, a part of an entire program, is of a piece with the balance of the applicable law. It is designed to and its very terms prevent, either the arbitrary shutting down of gas wells, or the wasteful escape of gas into the air.

Recognized as Reasonable

The statute carefully avoids an express requirement that the gas shall at all events be confined. It orders it confined in order to, and only in order to, prevent its escape by waste. It provides for an orderly and careful inquiry into and determination of the question of fact whether there are other uses than those of light and fuel, to which the gas may be put without permitting waste by escape. It delegates to the body charged with the duty, and informed by experience in its discharge, of conserving the oil and gas resources of the state the fact determination necessary to release a well. Such delegation to an administrative fact-finding body like the Railroad Commission, is universally recognized as reasonable, valid and appropriate. Armstrong vs. Whitten, 41 Fed. (2nd) 241; United States vs. Grimaud, 220 U.S. 508; Brazeale vs. Strength, 196 S.W. 247; Trimmier vs. Carlton, 116 Tex. 572; City of Denison vs. Municipal Gas Co., 3 S.W. (2nd) 794.

Plaintiff has not shown any finding by the commission after hearing, of the necessary fact that its use of gas is not wasteful, and it affirmatively appears from the proof that the gas is, in the face of the staute being permitted to waste by escape into the air. We conclude, therefore, that the section under review in obligating persons to confine gas within their wells in order to prevent its waste by escape until it can be used for light or fuel, unless upon a proper showing, authority has been given by the commission to the owner to utilize the gas for some other nonwasteful purpose, is valid as against plaintiff's attack, and that plaintiff may not for itself or its purchasers, complain of its reasonable enforcement.

Question of Market

We are not unmindful of the proof by stipulation and by evidence that there is no market now afforded for use of the gas in question here for light and fuel, or of plaintiff's earnestly advanced claim that there will, in reasonable probability, never be. We do not hold that upon proof which should establish that the effect of a statute will be to permanently deprive owners of wells of, or unreasonably restrict them in, the use of their gas, they would be entitled to no relief.

Broad as we believe the legislative power in conservation to be it of course has limits, and it may not be exerted either outside of the field in which it may legitimately operate, Kansas Natural Gas Co. vs. Haskell, 221 U.S. 229, or in an oppressive way. Spann vs. City of Dallas, 235 S.W. 513; J. H. McLeaish vs. Binford, 52 Fed. (2nd) 137; Macmillan vs. R.R. Comm. supra.

If we could agree with plaintiff's contention advanced by claim rather than by proof, that the State of Texas is so underlaid in all its parts with vast supplies of gas that if confined until it finds a market for light and heat, the use of the gas in question here will be forever restrained, we should agree with its conclusion that a statute purporting to conserve it for a use to which it could never be devoted is not regulation, but confiscation. We do not find the facts to be as asserted; on the contrary, we find not only a record void of such proof, but that judicial notice of the condition and development of the industry which we are entitled to take (Macmillan vs. R.R. Comm. supra.; People vs. Associated Oil Co., 294 Pac. 723; Gilbreath vs. States Oil Cor. 4 Fed. [2nd] 232) tends to, if it does not conclusively, establish that the supply of this great natural resource is limited, and unless measures to prevent its wasteful handling and use are taken, these apparently vast resources will soon be dissipated, never to be reclaimed. So finding, we see nothing unreasonable in the statute, and especially nothing unreasonable in its application to plaintiff and its contractors, whose use of the gas is not only in direct violation of the purpose of the statute, but of its very terms, constituting as it does, reckless and improvident waste of the plainest kind.

Legislative Intent Clear

Nor do we find plaintiff any better circumstanced as to its attack upon Article 6014. Whatever difficulty we might have had in finding a sufficiently clear guide to the legislative intention, and a definite expression of its will in the prohibition in Section (e) of the wasteful utilization of gas, with its proviso that the utilization of gas from wells producing both oil and gas for manufacturing gasoline shall not be construed to be wasteful, is obviated by the clear and precise provision of Section (j) prohibiting the escape into the open air of natural gas, except as may be necessary in the drilling or operation of a well. This provision taken in connection with Article 6008 and Sub. (e) of Article 6014 makes the legislative intent clear. It co-operates to prohibit the escape into the air of natural gas, either from the wells themselves or from plants to which the gas is delivered for the extraction there of its gasoline content, and subsequent wasteful blowing into the air.

Penalties Excessive

While we find the statutes valid, we are impressed with plaintiff's contention that the penalties provided by the several statutes of $1,000 a day, each and every day to constitute a separate offense, are on their face so drastic, so excessive and extreme as that they appear plainly to be designed to affright those subject to the act into abject and incontinent submission. It is fundamental that there is no due process in a statute which, though it provides for penalties collectible by suit, makes every day a new offense, and thus piles them so heavily on as to make prohibitive the hazard of court trial. Such provisions in statutes preventing access to the courts to try out disputed questions of right, deprive the citizen of his fundamental right to "know his rights, and knowing dare maintain them." They may not be so pressed. Ex Parte Young 209 U.S. 123; Okla. Operating Co. vs. Love, 252 U.S. 337.

We do not, however, find it necessary to at this time issue a decree against the state, preventing enforcement of the penalties, for upon the record before us it is plain that the state is not pursuing, nor proposing to pursue, any drastic or oppressive course. On the contrary, the state has submitted the issue of its right to judicial review by cross action in this case. In view of this situation, the only decree that we should now enter is one denying plaintiff the injunction prayed, and granting the state an injunction against plaintiff's wasteful use of gas, such injunctive decree to provide that plaintiff must refrain and desist from using gas at its plant unless and until provision is made for the utilization of the residue gas without waste.

The case will be kept open, however, for orders at the foot of the decree, and should it be made later to appear that the defendants are undertaking to enforce the law by claiming penalties in advance of the final determination of its validity, plaintiff may apply to this court for an injunction of the kind granted in Okla. Operating Co. vs. Love supra. to protect it against the consequences of drastic and oppressive efforts of the state to compel a surrender of plaintiff's undoubted right to in good faith and upon reasonable ground contend in the courts for the correctness of its view that the statutes as applied to it are confiscatory.

Approved: DuVal West, judge.

TRINIDAD PRODUCTION HIGHER

NEW YORK, Feb. 15.—Production of petroleum on the island of Trinidad during 1931 totaled 9,768,734 bbls., as compared with a production of 9,418,978 bbls. in the preceding year, according to a report from Alfred Demorest, American vice consul, at Port-of-Spain, Trinidad. Refinery operations on the island were also larger in 1931 than during the preceding year.

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Field Work Increases in Older Areas

Oklahoma Operators Expect Considerable Revival of Field Operations by Mid-Spring. New Production Allowables

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

New locations and rigs continue to increase in Oklahoma with indications that within 60 days considerable development work will be under way. At the present time the work is confined to the older districts where production is more or less assured. More attention has been given the shallow districts in Carter, Pontotoc, Seminole and Stephens Counties. During the week there were eight locations made in the Oklahoma City Field, this being the largest number of any week since last summer.

The State's production shows a small gain over the previous week amounting to approximately 8,800 bbls. a day. The daily average production for the week ending February 13 was 404,350 bbls.

The allowable production of the Oklahoma City Field for the last half of February was reduced 1,000 bbls. a day to 94,000 bbls. by the Oklahoma Corporation Commission Saturday, February 13. All of the reduction was taken from the Silicious lime area of the field, which was reduced to 5,000 bbls. a day instead of 6,000 bbls. a day, the same to be allocated to all the wells.

The only other change was that permitting operators to run current underproduction for the first half of the month at any time during the proration period. The deferred underage will continue to be produced at the rate of 1.5 per cent. The new order is effective at 7 a. m., February 16.

The commission's order includes 25 bbls. a day for 643 wells or a total of 16,075 bbls. The 83 water wells were allowed 100 bbls. a day each, or 8,300 bbls. The commission allows the underproduced wells a total of 50,250 bbls. a day on the basis of 1.5 per cent. On February 1, a total of 3,350,000 bbls. was underproduced oil. Based on a potential of 3,040,000 bbls. a day for the Oklahoma City Field the commission allows one-half of 1 per cent additional flow or a total of 15,203 bbls.

Changes Suggested

Two important changes in the proration rules in the Oklahoma City Field were suggested during the week by the Indian Territory Illuminating Oil Co. in a petition presented to the Corporation Commission. Recommendations on these suggestions have been asked by Paul Walker, chairman of the commission.

The first change relates to the figuring of shut down time on wells taking their initial eight-hour tests, either before or after serving the required 65-day shut down time. Because of the many percentage changes in proration allowables and the change from time to percentage basis, there has been heard charges of irregularities in serving the shut down time.

It is suggested that the eight-hour initial flow be charged as overproduction and made up accordingly, without respect to time element other than the 65-day period. The operator also might take four hours of this initial time as a potential. In either case the shut down time would be reduced.

The second change would permit shifting of production allowable from high gas-oil ratio wells to low gas-oil ratio wells on the same lease. This would prevent wastage of huge amounts of gas and conserve the gas energy on the sands of the field.

Crude Demand Lower

At the open hearing before the corporation commission held in Oklahoma City, February 11, to determine the allowables for the last half of February in the Oklahoma City Field, it was found the crude oil demand was lower than it was during the first half of the month. The pipe line companies ask for 87,300 bbls. a day from the field, or 6,000 bbls. less than in the first half. Some changes in the regulations were suggested.

The allowable for the first of the month was placed at 95,000 bbls. a day by the commission. At the same time it was estimated that the underproduced and under-run oil for the first half of February would total approximately 220,100 bbls.

It is believed that if the commission reduces the daily allowable of the field, that little change will be made from the present allocations, except for the amount given to the underproduced and to the lime wells. The daily average production of the lime zone wells during the first eight days of the month were 4,735 bbls. while the daily allowable was 6,000 bbls.

Could Find No Wrong

During the week an Oklahoma grand jury adjourned after reporting that it discovered no evidence of irregularities in the enforcement of proration laws in the Oklahoma City and in the Greater Seminole Field. The report declared that there was discrimination against the Oklahoma City Field in favor of the Seminole Field and recommended that the Oklahoma Corporation Commission make some effort to correct or explain to the oil operators of the State this difference.

In the report the grand jury stated that the Seminole Field has a daily potential of 300,000 bbls. a day and was permitted to produce 55,362,561 bbls. of oil during 1931, and the Oklahoma City Field with a potential of better than 3,000,000 a day, was allowed to produce only 42,018,812 bbls.

Pipe Line Nominations

Pipe line nominations for the last half of the month, and the daily average shipments of the companies during the first eight days of February, were as follows:

Company—	Shipments daily av. bbls.	Nominations daily av. bbls.
Champlin	1,104	1,104
Continental	7,000	2,000
Empire	17,743	15,000
Magnolia	4,834	12,000
Oklahoma	17,476	17,000
Prairie	817	817
Shell	1,458	4,000
Sinclair	2,796	3,000
Stanolind	14,719	20,000
Tidal	179	179
Wilcox	2,850	3,000
Capitol	53	53
Globe	7,835	7,000
Petroleum	1,832	1,850
Salem	781	2,500
White Oak	....	2,000
Anderson-Prichard	25	none
Operators	*1,165	

*Included in Magnolia nomination.

The Shell Petroleum Corp. increased its nomination 1,000 bbls. over the first half of the month, and the company announced it would make up the difference between the present shipments and its nominations for the first half of the month before the close of the period. The Continental Oil Co.'s nomination was a decrease from the first half of the month due to a decline in the market demands. The Empire Oil & Refining Co. stated that it would continue to take 15,000 bbls. a day from the Oklahoma City Field and 3,000 bbls. a day from the Indian Territory Illuminating Oil Co.'s tanks at Cushing, if the present allowable is permitted to remain unchanged.

Wants Wider Control

Paul A. Walker, chairman of Oklahoma Corporation Commission, announced he was in favor of more stringent legislation to give the State wider control of oil proration. He stated that he believed it was the only cure for the alleged injustices pointed out in the report of the Oklahoma County grand jury report.

He also said that he believed the Oklahoma City Field has not had its full share of production, but the matter is not within the control of the commission because the State cannot stabilize the market demand for oil. The Oklahoma City Field has been discriminated against in favor of the Greater Seminole Field, the grand jury charged. The report stated that a total of 172,655,300 bbls. of oil had been taken from Greater Seminole in excess of that taken from the Oklahoma City Field during the last three years.

If it was possible to transfer the shipments of oil from the Greater Seminole Field and other fields in the State to the Oklahoma City Field, by cutting down part of their production, it would be easy to handle, said Mr. Walker, but that does not transfer the market to the Oklahoma City Field. He pointed out as an example, when the commission prorated the production in the Nowata Field, to 90 per cent of the potential, refineries bought the other 10 per cent from Kansas. Apparently the limitation of the State's production did not help the Oklahoma City Field or the State.

Pipe line companies operating in the Seminole Field also have connections in East Texas. Reducing the output of the Seminole Field might transfer the market to East Texas. If it would transfer the market to Oklahoma City it would correct a bad situation. Another important factor is the fact that Seminole has many water wells which would be ruined if not produced, resulting in loss to the industry and State.

Mr. Walker said the Corporation Commission has tried to help the Oklahoma City Field, but sometimes, perhaps, the commission has unintentionally injured it by allowing more oil than the market could take. He explained the only way offset wells would be allowed greater percentage of their potential flow than other wells would be when the offset wells are water wells and come within the rule allowing them a 100-bbl. flow a day. In some cases the other wells might have only their regular allowable or a much smaller percentage of their potential.

The Oklahoma City Field presents an unsatisfactory situation to some of the producers. Part of this situation can be remedied only by legislation, giving the State more power to control in Walker's opinion. Another bad condition is that the competition is not in Oklahoma, but in East Texas. Walker also said that when the pipe line companies by law were declared common purchasers, they divorced themselves from the purchasing business and created separate corporations for purchasing of oil. The con-

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	S.D. 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	S.D. 5,502 ft.

ATOKA COUNTY

Campbell's No. 1 Baird, NW NE SW Sec. 31-1-13	Rig, abnd.
Edgerton Edwards' No. 2 Rowland, SE NE NW Sec. 6-1-15	Rig.

BECKHAM COUNTY

Pattel Royalty's No. 1 Goose Tree, SW SE SW SE Sec. 32-10-23w	Rig.
Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	T.D. 2,344 ft.; plugged back to 1,890-1,900 ft.; 1,500,000 ft. gas.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cmt. to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-2-22w	S.D. 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	S.D. 3,575 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	S.D. 5,115 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	S.D. 1,115 ft.

CHEROKEE COUNTY

La Piere et al's No. 1 Woods, C SE SE Sec. 27-17-21	S.D. 1,504 ft.

COAL COUNTY

Radial Oil Co.'s No. 1 McGraw, NE NW Sec. 2-1s-8	S.D. 1,450 ft.
McCraw Oil Co.'s No. 1 Ward, NE SE Sec. 35-1-8	2,000,000 ft. gas; 1,765-1,846 ft; completed.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	S.D. 760 ft.

COMANCHE COUNTY

G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	S.D. 1,450 ft.

CREEK COUNTY

R. F. Moore et al's No. 1 Gillam, NE cor. SW NW, Sec. 17-17-8	Rigging up.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	S.D. 5,850 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w	S.D. 4,830 ft.

GREER COUNTY

Dovell et al's No. 1 Capell, NW cor. Sec. 1-7-22w	5,000,000 ft. gas 1,455-65 ft., T.D. 1,760 ft.
French's No. 1 Murphy, SW NW Sec. 23-7-21w	S.D. 1,645 ft.

HASKELL COUNTY

Ault et al's No. 1 Harrison, CWL SE NE Sec. 14-9-19	S.D. 650 ft.
Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19	S.D. 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-19-9	S.D. 300 ft.
Holden's No. 1 Phillips, SE cor. Sec. 3-9-18e	S.D. 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e	S.D. 2,387 ft.

KAY COUNTY

Harris & Haun's No. 1 Watson, SW NW Sec. 28-28-1w	Drlg. 880 ft.
W. H. Atkinson et al's No. 1 Hayes, SE NE Sec. 24-28-3	Drlg. 2,560 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1	Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2	S.D. 3,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w	Rig on ground.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w	S.D. 820 ft.

LATIMER COUNTY

P. English's No. 1 Unknown, NW SE Sec. 16-6-19	S.D. 1,542 ft.

(Continued on Page 59)

tention is that since the State does not have jurisdiction to make purchasers buy equitably, legislation may be necessary.

Oklahoma City Production

The following is a summary of the production from the Oklahoma City Field during the month of January. The crude oil stocks on the leases show a decline of 12,084 bbls. for the month of January. The amount of overproduced oil increased during the month from a total of 537,664 bbls. to 631,176 bbls. The following is a report by companies showing the number of wells producing, the Corporation Commission's potential of each company, and the net production for January:

Company—	No. wells	Corp. Com. potential	Jan. prod.
Acme	1	17,255	15,568
Addition	1	19,216	23,329
America	1	13,047	7,566
Anderson-Kerr	1	10,907	6,731
Anderson-Prichard	27	115,498	105,347
Argood	1	196	4,092
Blackstock	1	1,770	2,724
Blackwell	5	28,357	24,710
British-American	9	86,631	76,296
California	1	813	1,258
Capitol C. & R.	2	19,494	8,795
Capitol P. and Tr.	1	13,052	5,446
Century	5	42,643	51,513
Champlin	10	32,821	35,283
Chatham	2	28,264	23,480
Coline	34	16,889	68,849
Continental	10	9,444	22,739
Courter	1	5,607	2,454
Cromwell-Franklin	34	90,113	137,071
Dabney-Johnson	1	4,260	4,399
Danciger	1	10,279	2,289
Denver	6	39,756	31,622
Denver-Reynolds	1	12,216	21,087
Dengall	4	28,113	33,448
Donleon	2	27,768	26,292
Eason	3	28,499	13,385
Empire	1	16,409	28,359
Franco-Dominion	1	12,506	.....
Wirt Franklin	39	72,895	161,156
Great Southern	1	5,941	4,188
Government	2	9,980	16,184
Hall & Briscoe	1	2,079	3 860
Ed. S. Holman, Inc.	1	3,352	.....
I. T. I. O.	293	520,305	789,766
Kedberg	1	474	.....
Kessler O. & G.	1	3,727	.....
Mabee	4	48,274	44,888
Marco	1	no pot.	.....
Marshall	3	8,698	16,576
McArthur	2	27,402	15,991
Mid-Kansas	7	5,811	10,798
Minnehoma	1	18,886	15,466
Morgan	3	32,559	26,495
R. M. Murray	1	no pot.	.....
Ocate	1	no pot.	.....
Oils, Inc.	4	32,436	32,541
Paine & Johnson	1	10,853	.....
J. H. Peacock	3	2,981	7,916
Phillips Pet.	62	608,101	331,035
Plains	2	10,028	6,671
Prairie	14	7,142	37,598
Rajah, Inc.	1	14,569	11,376
Reynolds & Unruh	1	8,254	6,447
Russell	2	21,122	17,583
Scott	1	223	3,253
J. C. Shaffer	6	30,589	36,303
Shell	8	1,487	18,708
Sinclair	54	96,777	95,203
Skelly	22	102,809	98,926
Slick-Urschel	100	493,116	584,313
Springrose	2	13,019	4,490
Suaray	4	54,366	45,269
Watchorn	1	15,341	12,668
Westgate	6	84,460	45,590
Wilcox	10	79,434	49,334
Wrightsmith	2	2,882	5,675
Total	838	3,191,545	3,347,389

Water Situation

According to a report on the water situation in the Oklahoma City Field it appears that the water is spreading in the Wilcox sand zone. Comparing the number of water wells in the field on the first of January with the first of February, the report shows there were only two Wilcox sand wells showing water on January 1, while the number has increased to five on February 1. These wells are located in both the north and south ends of the field. Water wells producing from the lower Simpson sand showed a total of 92 on January 1, and a total of 99 on February 1. The number of wells showing water decreased in the lime zone during the same time. On January 1, there were a total of 54 wells showing water, and on February 1 there were only 50 wells. The difference in the number was the result of wells being plugged back to shut off the water or plugged back to shallower horizons and completed as gas wells.

Magnolia's Pipe Line Changes

Magnolia Petroleum Co. is preparing to make a short pipe line connection between its pipe line and the Prairie Pipe Line Co.'s line north of the Magnolia's pipe line station at Purcell, in McLain County, to permit the transfer of oil which will enable the Magnolia to supply crude to Socony-Vacuum refineries at Wood River, Ill., and other midwestern points.

Magnolia Petroleum Co. is also preparing to make changes in its pipe line system to enable the company to ship oil both north and south. Changes are being made at stations south of Purcell and similar adjustments are being considered at the company's North Texas stations, so crude oil can be shipped north if it becomes necessary.

The leasing of new acreage continues in the area surrounding the Oklahoma City Field.

A new wildcat test was announced about 5 miles south of the Sacred Heart Pool, in Pottawatomie County, the Barnsdall Oil Co.'s No. 1 Gray, NE cor. SW, Section 25-6-4. The location has been made and the cellar is being dug. Rig material is being moved out. The location is approximately 2 miles north of the South Canadian River.

Another small well was reported in the Carr City Field during the week. Gypsy Oil Co.'s No. 7 Coker, NW cor. SW SW, Section 2-8-5, in the Carr City extension field, made 110 bbls. of oil in 24 hours from the Wilcox sand at 4,160-79 feet.

In the Conservation Pool, in Pontotoc County, four producing sands have been found indicating the area will receive considerable development. Edna Marie Oil Co.'s No. 1 Walker, SW cor. SE NW, Section 22-5-6, was drilling out the cement plugs after landing the casing at 1,575 feet. The total depth of the test is 1,710 feet. There are eight other tests in the surrounding area either rigging up or drilling.

Seminole Production

The production from the Greater Seminole area for the week ending February 12, was 141,530 bbls. The Seminole Field, which includes the first 12 pools listed below, averaged 104,470 bbls.

Pool—	Bbls.
Little River	17,790
East Little River	4,510
Carr City	17,640
Maud	2,090
Mission	6,675
Bowlegs	12,145
Earlsboro	12,110
South Earlsboro	4,025
East Earlsboro	12,105
Seminole	10,975
East Seminole	1,090
Searight	3,315
Total	104,470
Allen	8,690
Asher	630
Wanette	3,100
Konawa	4,660
Sasakwa	1,790
St. Louis-Pearson	18,190
Total	141,530

Creek County

Gled Oil Co.'s No. 3 Hamilton, NE cor. NW NE, Section 29-19-9, is a machine rigging up. S. W. Anthony made location for No. 10 Whetstone, NE cor. NW, Section 3-16-12. Gled Oil Co.'s No. 2 Holmes, SW cor. NE, Section 25-19-8, has been completed for 1,500,000 feet of gas in sand 2,254-67 feet. Tulsa Oil Co.'s No. 2 Flinchum, SW cor. SE SW, Section 11-19-9, made 2,000,000 feet of gas in Bartlesville sand 2,139-98 feet. A. G. Blauner and others' No. 1 E. Walker, SW cor. SE NW, Section 30-17-7, has been abandoned at 2,995 feet. Magnolia Petroleum Co.'s No. 9 Williams, NE cor. NW NW, Section 10-16-7, is dry and abandoned at 2,651 feet. J. A. Wise and others' No. 1 Harris, SW cor. NW NW, Section 16-14-8, has been completed for 1,100,000 feet of gas in sand 1,065-85 feet after plugging back from 1,111 feet.

Lincoln County

Kemp & Nunnelee's No. 1 Kannady, SE cor. SW SE, Section 26-17-6, has been abandoned at 3,300 feet.

Okfuskee County

Rossiter Oil Co.'s No. 1-A Fee, NW cor. SW NW NE, Section 22-12-11, is rigging up. H. Stekoll and others made location for No. 25 Holmes, NE cor. SW SE, Section 16-11-11. No. 24 Holmes, NW cor. SE SE, Section 16-11-11, has been completed for 70 bbls. in sand 2,614-68 feet.

Oklahoma County

M. T. Smith and others' No. 1 Packing Co., NE cor. NW NW SW, Section 3-11-3w, Oklahoma City Pool, is a cellar. Indian Territory Illuminating Oil Co. and others made location for No. 4 Ivanhoe, Lot 29, Block 7, Ivanhoe Addition, NW cor. SW SE NE, Section 15-11-3w. Indian Territory Illuminating Oil Co. and Shaffer staked location for No. 5 Lawrence Place, Block 13, Lot 14, Lawrence Place, SE cor. SW NE, Section 15-11-3w. Gulf Production Corp. of Oklahoma has the cellar dug for No. 1, Block 4, Wilmont Place, NE cor. SW, Section 22-11-3w. Indian Territory Illuminating Oil Co. made location for No. 2 Little, NE cor. NW NE NE, Section 27-11-3w. Continental Oil Co., Anderson and Kerr's No. 1 Warsaski, SE cor. SW SE, Section 34-12-3w, has been completed for 7,880 bbls. in 4 hours on a seven-eighths inch choke, producing from Wilcox sand topped at 6,342 feet, total depth 6,505 feet.

Okmulgee County

M. J. Sullivan and Dave Logan moved a machine in for No. 1-A Nubbie, NE cor., Section 34-15-12. William Sherry and others' No. 1 Pense, C NW SE, Section 21-16-11, has been completed for 4,000,000 feet of gas in Tanaha sand 2,152-58 feet.

Osage County

Lindy Oil Co. made location for No. 3, NE cor. NW SW, Section 29-20-12.

Pottawatomie County

Carter Oil Co. and others' No. 1 Tucker, SE cor., Section 34-7-4, is a cellar. Oils, Inc., has the cellar dug for No. 1 Horne, SW cor., Section 13-6-3.

Seminole County

Amerada Petroleum Corp.'s No. 4 L. Tiger, SE cor. NW SE, Section 3-8-5, Carr City Pool, has been completed for 955 bbls. in Wilcox sand 4,146-60 feet.

(Continued on Page 67)

BRIEF OF A. S. M. E. COMMITTEE ROTARY PRIME MOVER REPORT

By H. W. Manley
Chairman*

Individual oil companies and equipment manufacturers have from time to time collected electrical rotary drilling data for their private information, in order to investigate some specific problem. At the conclusion of such investigations, the information was usually filed without any direct benefit to the oil industry as a whole. This subcommittee of the prime movers committee of the Mid-Continent section of the A.S.M.E. was organized in order that a co-operative and unbiased engineering program for the collecting and compiling of electrical rotary drilling data might be possible, and the results which would furnish a definite basis on which to work toward more economical drilling, could be made available to the oil industry.

At the time of the formation of this committee, the Oklahoma City Field was at its highest point of development. Although as deep or deeper wells had been drilled previous to the Oklahoma City Field development, the oil industry had never experienced the need of competitive drilling at the depth of the field (approximately 6,500 feet) in which the time element or "feet of hole per day" was an important factor in the selection of prime movers for rotary drilling.

Most Acid Test

The ability of rotary prime movers to develop the power needed in the hoisting of drill pipe out of the hole is perhaps the most acid test imposed on prime movers during drilling operations, in which the prime mover itself directly affects the time element of drilling. In view of this fact, the committee formulated its procedure so as to include a time study which would segregate each operation used in hoisting and lowering the drill pipe in the hole, and at the same time, be able to correlate horsepower requirements of the prime mover per stand of drill pipe. As a result, the committee adopted a time study procedure which is briefly given as follows:

1. Hoisting operations: (a) Hoisting pipe. (b) Setting slips and breakout out. (c) Picking up and racking. (d) Lowering elevators.

2. Lowering operations: (a) Picking up and making up. (b) Lowering pipe and unlatching elevators. (c) Hoisting elevators.

In addition to the time study procedure which was taken with a stop watch on various tests, the committee used fast integrating recording wattmeters in determining the horsepower and K.W.H. requirements per stand of drill pipe during the hoisting operations. By using these recording wattmeters, we were able to correlate the horsepower requirements with the time study cycle of operations in hoisting the drill pipe, due to the fact that one hour on the integrating charts only represented 15 seconds of actual time.

In the electrical committee's report, we are presenting six curve sheets which represent horsepower time requirements per stand of drill pipe coming out of the hole on six different tests which the committee made in Seminole and Oklahoma City fields at depths ranging from 2,260 feet with 6⅝-inch drill pipe to 5,980 feet with 4-inch drill pipe. Sprocket ratios and drawworks layouts which are representative of those used on our various tests, are being presented for the purpose of supplying equipment manufacturers data by which they will be able to segregate the horsepower requirements for each gear shift on the drawworks and determine the horsepower load on their respective equipment. No effort was made by members of the committee to obtain tests on special equipment. The equipment tested was that which the drilling contractor or oil company deemed advisable in drilling the well to a desired depth. As a result, we believe that such data as presented is representative of the average conditions and horsepower requirements for electric rotary wells.

Hoisting Operations

In reference to the horsepower time diagrams, we find that the average driller's mania for speeding up the hoisting operations of coming out of the hole by untimely gearshifts on the drawworks causes an increased horsepower input to the motor of 40 to 68 per cent, while they decrease their actual hoisting time from only 14 to 40 per cent, or approximately an average of 15 seconds per stand of drill pipe. The electrical rotary motors have had to be constructed to have a pull out torque of three to four times their rating and it is doubtful if such surges as a 400-horsepower input to a 150-horsepower motor would injure the motor. From an engineering standpoint, however, such practices would tend to cause an unnecessary increased depreciation of the prime mover as well as the equipment it operates.

We are submitting economic data on 15 and 21 tests in the Seminole and Oklahoma City Fields, respectively. This data gives the size of motors connected to the drawworks and mud pumps days of operation, total K.W.H. consumed, K.W.H. consumed per foot and the power cost per foot.

In the Seminole Field, 15 wells with an average depth of 3,403 feet showed an average power cost of .393 cents per foot. The average power cost on 14 wells in the Oklahoma City Field, which were not operating over four months, showed an average power cost of .768 cents per foot for an average depth of 6,505 feet.

In conclusion, the committee believes that the data as presented in its report will furnish the petroleum engineer and executive a tool by which they can study and work out problems relative to the electrical rotary prime mover.

*Before Tulsa section, A.S.M.E.

Gas Wildcatters Awake in Mississippi

Louisiana and Arkansas Fields Very Quiet, But in Adjoining State Extensive TestWork Is Expected This Year

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Feb. 15.—One oil well and three dry holes comprised the list of completions in this division during the past week to summarize the dullest period in several months. The producer was in the Zwolle area of Sabine Parish, the Coates Petroleum Co.'s No. 1 Parie, Section 2-7-13, was officially completed flowing 375 bbls. of pipe line oil daily from 2,405 feet. The well, which flowed as much as 60 bbls. per hour on first test, is an extension of one-half mile to the western production, southwest of the Zwolle Townsite Pool. On the opposite side of the field, the Pelican Natural Gas Co.'s No. 1 Buckley, Section 6-7-10, tested dry at several depths and was abandoned as dry at 2,800 feet. This test was one of several staked a few weeks ago east of the extreme eastern extension of the field, and after Smitherman & Grigsby completed a good well in Section 12-7-11. The latter well has been consistently flowing around 1,600 bbls. daily since its completion more than a month ago. The two other dry tests were in Mississippi's first gas area near Amory in Monroe County. Both wells have been shut down for some time. The Amory Development Co.'s No. 1 Bourland, Section 2-13-19, which was first spudded in in June, 1928, was finally abandoned at 3,015 feet, a depth reached in October, 1929. In Section 2-12-19, McAlpine and others abandoned their No. 1 Cowart at 3,795 feet. This test, which was started in June, 1929, has been temporarily abandoned since the derrick was destroyed by fire in November of last year.

Wildcatting in Mississippi

Mississippi is experiencing a temporary lull in drilling activities, which operators of this division believe precedes an extensive wildcatting campaign in that State. In the western part of Hinds County, between Jackson and Vicksburg, the Mississippi-Minnesota Oil Co. is moving in rig on its No. 1 Edwards Land Co., Section 23-6n-4w. This test is located on a large block of acreage, 1½ miles north of the town of Edwards. The Bay Springs Petroleum Co., in Jasper County, is washing to bottom at 3,139 feet to resume drilling on its No. 1 Keys, Section 21-2-10. In Sharkey County, the United Gas Public Service Co. has spudded in to 33 feet on its No. 1 Lenhart, Section 14-14n-6w. The test is temporarily shut down pending the moving in of the remainder of the rig and drill stem. The Jackson Field in Hinds and Rankin Counties failed to report the completion of a good gasser during the past week, the first time in many months that this field has been missing from the successful completion column. In the Hinds County area, three tests are rigging up as follows: Ferguson-Fuller and others' No. 1 Cruse, Section 34-6n-1e; the Love Petroleum Co.'s No. 1 Interior Lumber Co., Section 2-5n-1e, and Atkins and others' No. 1 Crane Lawrence in Section 23-6n-1e. In Rankin County, James Alexander, trustee, has set 6⅝-inch casing at 2,343 feet in his No. 1 Taylor & Watkins, Section 2-5n-1e, and will drill plug to test within the next few days. Three other tests are rigging up in this county as follows: Henslee and others' No. 1 Tanner, Section 14-5n-1e; Meredith and others' No. 1 Strawder, Section 12-5n-1e, and Muse & Muse's No. 1 Cotton in Section 14-5n-1e.

Resumption in Arkansas

Arkansas reports several active operations after practically a complete shutdown for several weeks. In Pike County, E. R. Henderson has resumed operations on his No. 1 East, Section 13-9-23, and is drilling at 1,287 feet. This wildcat has been shut down at 338 feet since September of last year. A semiwildcat near the producing areas in Union County, H. H. Helms' No. 1 Berry Davis, Section 31-16-14, is drilling in sandy shale at 2,155 feet. The Lion Oil Refining Co.'s deep test, No. 9-A Hayes, Section 4-16-15, in the Smackover Field, has resumed operations after being shut down on account of high water for several weeks. The test has drill stem stuck in rock salt at 7,255 feet, and the crew is lubricating with oil in an effort to loosen it. In the Urbana district of Union County, Wilson & Chapman have become active again by starting two new tests. They have moved the rig from their No. 1-B Hadley to No. 1 K. D. Parker, one-half mile southeast in the same section. The Hadley test was drilled to a total depth of 3,650 feet, but was plugged back and 6-inch casing set at 3,538 feet. A test of the well at 3,545 feet resulted in a hole full of fluid made up of salt water and oil which failed to make a commercial producer. The other new test is No. 1 Emily King, one-half mile north of the Parker test and northeast of No. 1-B Hadley.

Zwolle Sole Active Area

In North Louisiana, with the exception of the gas area, most of the drilling operations are confined to the Zwolle area of Sabine Parish. An extensive campaign is on in that district, particularly on the western and eastern flanks, more than 15 miles apart. Several tests in the vicinity of Smitherman & Grigsby's No. 1 Gardner, a good producer in the northeastern part of Section 12-7-11, of the eastern pool, are down to the pay horizon with varying results. Eddie Self's No. 3 Jacobs, an offset to the north in Section 1, failed to flow steadily after making several heads, and the well is standing 1,000 feet in oil at 2,518 feet and will be put on standard rig to pump. C. H. Tuttle's No. 1 Byrd, an offset to the east in Section 7-7-10, has set 6-inch at 2,442 feet, and is drilling plug to test. One-fourth mile southeast, the Service Drilling & Royalties Co.'s No. 1-B Gardner, failed to hit the crevice in the chalk rock and tested dry at 2,571 feet. To the south of this producing dome, in Section 14-7-11, O. J. Baird's No. 1 Duggan, one-fourth of a mile southeast of W. F. Lacey's No. 1 McNeely, a 600-bbl. producer, has met with barren results. The well tested dry at 2,461 and 2,545-76 feet and is now shut down, waiting orders, at the latter depth. Baird & Stone have staked an offset to the east of the Lacey well, their No. 1 McNeely.

Big Well Quits Flowing

In the western part of the field, Smith and others' No. 1 Hale, which is one-fourth mile south of production in Section 1-7-13, tested dry at 2,446 feet. This test had a good show of gas and oil at the top of the chalk slightly below the 2,000-foot level, and the hole stood full of oil at 2,065 feet, but failed to flow. In an effort to increase production, the hole was deepened to 2,446 feet with barren results. Since Rush & French's No. 1 Martinez, Section 11-7-13, originally completed a few weeks ago as a 3,000-bbl. producer, has showed salt water and later refused to flow, several locations staked around this 3-mile extension have not yet begun operations. One of these new operations, the Southland Drilling Co.'s No. 1 Martinez, in the same section, has set 10-inch surface casing at 102 feet and is drilling at 550 feet. Announcement was made during the week that the Root Refining Co. of Shreveport has taken over T. M. Legrand's No. 1 Peterson, a wildcat 5 miles southwest of Zwolle production in Section 34-7-13. The well has been shut down for several months for lack of funds at a total depth of 2,243 feet. The operators reported a good show of oil and gas at this depth and shut down to set 6-inch casing for a test. The wildcat is located on a block of 600 acres, and will be followed with interest to completion.

The Louanna Oil & Gas Co.'s No. 1 Hammock, Section 32-19-16, a wildcat in the gas area of western Caddo Parish, near Greenwood, is drilling at 1,200 feet. A drill stem test in the Nacatoch from 915-55 feet was dry.

Daily Average Runs

The fields of North Louisiana and Arkansas showed a net increase of 410 bbls. daily in the average runs for the past week. The daily average runs from the several pools were:

NORTH LOUISIANA

	Bbls.
Caddo, light	5,525
Caddo, heavy	1,970
Cotton Valley	490
DeSoto and Red River	1,960
Elm Grove	325
Haynesville	4,810
Holly	325
Homer	2,890
Pleasant Hill	330
Sarepta-Carterville	880
Urania	3,170
Zwolle	6,050
Total North Louisiana	28,725
Total previous week	28,345
Increase	380

ARKANSAS

Champagnolle	1,810
El Dorado	3,080
Lisbon	570
Nevada	1,240
Smackover, light	2,950
Smackover, heavy	22,920
Stephens	665
Urbana	300
Total Arkansas	33,535
Total previous week	33,505
Increase	30
Total both states	62,660
Total previous week	61,850
Increase	410

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Company, farm and location—	Remarks:
Stauffer & Eshleman's No. 1 Caruth, Sec. 40-1n-7e	Derrick.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14	W.O.S.R. 2,890 ft.
Dr. W. N. Hankin's No. 1 Nowell, 300 ft. S and W, NE cor., Sec. 12-19-11	T.D. 1,885 ft.
H. I. Morgan's No. 1 Strange, Sec. 23-19-11, 660 ft. N and E, SW cor.	Set 6-in. 1,731 ft; T.D. 1,735 ft.

CADDO PARISH

Calatex O. & G. Co.'s No. 1 W. B. Hudson, Sec. 8-16-16, 2,640 ft. E, 2,865 ft. NW cor., Sec.	Rigging up.
Louana O. & G. Co.'s No. 1 Hammock, Sec. 32-19-6, 660 ft. N and W, SE cor.	Drlg. 1,200 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4	S.D. 1,100 ft; high wtr.
Hudson et al's No. 1 Burton, Sec. 35-12-2e	S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6	T.A. 3,097 ft.

DESOTO PARISH

E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-13-15	S.D. for fuel 3,099 ft.
Rellitt Oil Co.'s No. 1 Ganno hrs., 300 ft. S and E, NW cor. NW NE, Sec. 12-11-16	S.D. 1,965 ft.
A. R. Smith's No. 1 Horn, Sec. 16-12-16, NE cor. Sec.	Rigging up.
A. A. Tutin's No. 1 Mickie, Sec. 7-13-12	Location.
Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 3-11-13	S.D. 1,266 ft.

MOREHOUSE PARISH

United Gas Public Service Co.'s No. 2 Sandidge, Sec. 11-20n-4e, 656 ft. S, 1,332 ft. W, NE cor. NW	S.D.; high wtr.; 2,132 ft.

(Continued on Page 57)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—PINE ISLAND

Company, farm and location—	Remarks:
Shreveport Oil Corp.'s No. 2-B Muslow, 1,000 ft. S, 300 ft. E, NW cor., Sec. 32-21-15	S.D. 2,135 ft.
Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15	S.D. 2,275 ft.

MOREHOUSE PARISH

Southern Carbon Co.'s No. 57 fee, Sec. 9-20-4e, 660 ft. N, 1,317 ft. E, SW cor.	S.D. high water 948 ft.

OUACHITA PARISH

Carbon Cons.' No. 7 Guthrie, Sec. 50-20n-4e, 5,263 ft. N, 7,475 ft. W of cors. of Secs. 25, 26 and 49, in Sec. 50	Location.

RICHLAND PARISH

United Gas Public Service Co.'s No. 1-B Alice Purvis, Sec. 34-17-6, 81 ft. N, 599 ft. W, of center of Sec.	Set 6⅝-in. 2,300 ft.

SABINE PARISH—ZWOLLE

Pelican Nat. Gas Co.'s No. 11 La. Long Leaf Lbr. Co., Sec. 10-7-11, 330 ft. N and W, SE cor. NE NW	W.O.S.R. 2,592 ft.
Smith et al's No. 1 Hale, Sec. 1-7-13, 330 ft. S and W, NE cor. NW SE	Tested dry; arranging to deepen 2,446 ft.
A. F. Tarver's No. 2 Cutrer, Sec. 12-7-11, 330 ft. S and W, NE cor. NW NW	W.O.S.R. 2,550 ft.
O. J. Baird's No. 1 Duggan, Sec. 14-7-11, 328 ft. S, 648 ft. E, from C of Sec.	Tested dry; waiting orders 2,576 ft.
Ray Baker's No. 1 Sabine Lbr. Co., Sec. 1-7-12	W.O.S.R. 2,548 ft.
Crescent Drlg. Co.'s No. 3 Byrd, 330 ft. S and W NE NW, Sec. 12-7-11	Location.
Crescent Drlg. Co.'s No. 2 Byrd, Sec. 12-7-11, 330 ft. S and W, NE cor. NW NE	Whipstocking 6-in. 2,390 ft.
O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-8-12	S.D; W.O. 2,599 ft.

(Continued on Page 57)

Rabbs Ridge Area Extended to North

Second Producer in New Play at Barbers Hill. Interest Again Being Directed to Victoria County. Deep Test in Markham

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Feb. 15.—Completions on the Gulf Coast the past week offered little of general interest with fewer than a half dozen new wells being reported throughout the district, the smallest number in many weeks. However, new development is being started up in several important areas and on scattered domes and indication is being given that drilling activity will show further increase in localized plays.

The most important new production added during the week was at Rabbs Ridge, Fort Bend County, where Gulf Production Co. completed its No. 2 Mary Booth-Meyers flowing better than 2,100 bbls. through a half-inch choke. This well, in the deep sand at a total depth of 5,240 feet, is located on the extreme north end of the field and is a 600-foot extension and the sixth consecutive deep sand well. Due to pipe line limitations of the field restricting output to 9,000 bbls. daily, the new well and also all others will have to be cut back ratably to provide for the added well, the total output already being close to the maximum.

Gulf Production Co. has made location and has rig up for another important extension test, No. 1 T. R. Booth, which is approximately 800 feet due north of No. 1 Booth-Meyers, 475 feet north of the property line. No. 1 Booth-Meyers and the newly completed No. 2 Booth-Meyers (600 feet east of No. 1) are the present northermost producers. Already the deep sand has been proved for a distance of 2 miles from north to south and the new location, No. 1 Booth, will mark another step northward.

Cullen & West and Gulf Production Co.'s No. 3 George, 1,000 feet east of production on the south end of the field, has found a shallow sand showing oil at a total depth of 3,220 feet and is preparing to test. However, if it fails to make a well in this, it will be deepened to the deep sand, for which sand it was started.

Barbers Hill

At Barbers Hill, Sinclair Oil & Gas Co.'s No. 10 Wilburn, located in the new subsalt sand play which is going on along the east side of the dome, has been completed in sand at a total depth of 4,849 feet flowing 900 bbls. daily. This well, which tested salt water in the 4,400-foot Miocene sand underlying the salt overhang, was deepened to the present sand which is in the Oligocene and marks the second well in the new play which has drilled to this sand. The Oligocene has furnished the main production at Barbers Hill, but previous development in this horizon along the east flank has been off the edge of the dome where the sand is found from 5,200 to 5,400 feet, production in which was proved up in a drilling play which reached its peak in 1929 and 1930.

The present activity is located up on the dome, once condemned territory, where the thick salt ledge is drilled through and a new line of shallow production is being proved up inside the circle of older and deeper wells. There, a series of good wells has been completed in a Miocene sand found around 4,400 feet and more recently the Oligocene has been drilled into high up on the dome, the first well to do this being Mills Bennett Production Co.'s No. 6 Wilburn. This well was completed the middle of January at a total depth of only 5,024 feet as compared with 5,200-5,400 feet, where the same sand is found by wells located off the edge of the dome. The Mills Bennett well, however, since has quit flowing and now is being rigged up to work over.

Victoria County

Interest again is being directed at Victoria County of the lower coastal district where locations were made during the week for three additional tests and where additional drilling is due to be started in the near future. In the McFaddin district in southwestern part of the county. The Texas Company has location for No. 4 McFaddin, which is 2,800 feet due north of No. 3, completed New Year's Day as the first commercial oil producer in the county. The latter well is in a sand at a total depth of 5,835 feet and came in good for 600 bbls. daily. It more recently was reported making considerable water but a change in chokes has cut back the water.

In the same general district but 3½ miles to the south and west and across the San Antonio River in northern Refugio County, Humble Oil & Refining Co. has started drilling in its second test on the O'Connor Ranch following the completion early in December of No. 1 O'Connor as a 2,000-bbl. well in a sand at 4,155 feet. Whether the Humble and Texas wells are in separate pools or one large field has not been determined although both are in the same general trend which extends down through the Refugio Field, 15 miles farther to the southwest.

Second Test Located

About 5 miles to the north and east of The Texas Company's well, T. B. Slick estate, through the C. R. M. Drilling Co., has made location for the second test on its block where, in July, 1931, a 50,000,000-foot gas well, No. 1 McFaddin, was completed in sand at 3,512 feet. The second location is northeast of No. 1 McFaddin.

In the southeastern part of the county, Bunte and associates have made location for the second test on their block where another new field was opened several weeks ago by the completion of a well (Bunte and associates' No. 1 Keeran) making an estimated 40,000,000 feet of gas and 200 bbls. of oil. The second test is tentatively located 200 feet east of the discovery well. The block is in the Martin DeLeon Survey and is a part of a 5,000-acre block owned by the Gulf Production Co.

Houston Oil Co., which jointly with Magnolia Petroleum Co. (Vacuum Oil Co.), owns a prospect in northern Victoria County and on which a deep test recently was abandoned, is making preparations for a second test. At present a geophysical survey of the area is being made, it is reported.

Markham

At Markham, Matagorda County, United North & South Oil Co. is rigging up for a deep test on the northeast flank of the dome, where two good producers have been completed since last July. The location is 460 feet south and 80 feet east of the northwest corner of the McDonald 35-acre lease, I.&G.N. Survey, Block 9, Section 5, and is several hundred feet east of E. M. Hamill's No. 1 Meyers, William Hadden Survey, completed last July, and which not only opened production on the northeast flank but which has given Markham its first important production although the field has been producing since 1908. The Hamill well, although six months old, still is producing around 1,000 bbls. of pipe line oil choked in and is maintaining a pressure of 415 pounds on the tubing and 430 pounds on the casing. Through January it had produced a total of 169,734 bbls. This production is from a flank sand at 3,263 feet while previous production at Markham had been chiefly from shallower sands on top the dome and some distance from this well.

Since completion of the Hamill well, one other producer, Powers Production Co.'s No. 1 Meyers, has been brought in, this well being 210 feet to the north of the Hamill well. It found the sand at a total depth of 3,376 feet. Although not as large as the Hamill well it also has proved an unusually consistent producer and had produced 29,418 bbls. through January and still is running better than 225 bbls. daily through chokes wtih pressure of 160 pounds on tubing and 825 pounds on casing. L. P. Smith and associates' No. 1 Hudson, which is to be a deep test on the south side of the Markham Dome, has started drilling.

Calcasieu Parish

The only other new production of the week was in Marrs McLean's No. 9 Gray, Vinton, Calcasieu Parish, which was completed in sand at 2,605 feet as good for 800 bbls. daily through a half inch choke. Harrison & Abercrombie's No. 15 Nash, Nash Dome, Brazoria County, proved a dry hole at 6,750 feet and was abandoned. It previously had been completed as a producer in sand at 4,844 feet but failed to hold up and was deepened in anticipation of finding lower horizons.

Damon Mound

The Texas Company is continuing development on the Damon Mound Dome, Brazoria County, where it has completed rigging up for No. 2 Cave, its second test. No. 1 Cave was abandoned early in January after encountering heaving shale at 3,647 feet. One other rig is running on this dome, that being Intercoastal Oil Co.'s (Layne and associates) No. 6 Wisdom, which is drilling deeper after testing dry at 3,609 feet.

Pilant Lake

Location for a second test on the Pilant Lake geophysical prospect in Fort Bend County has been made by O'Hara and associates' No. 1 Brown. This location is 600 feet out of the southwest corner of the 600-acre Brown tract in the William Barrett and Abner Harris Survey. This is northwest of a test drilled on the prospect by Pure Oil Co. and which was abandoned at 4,510 feet.

Among other domes where additional important development is to be undertaken are High Island and Sulphur. On the former three new locations have been made within the past two weeks and at Sulphur, two. Republic Production Co. also is starting up a new test at Hull and other new work is scattered over various domes and prospects.

Lost Lake

Late in the week, Pure Oil Co. was cutting and pulling screen in its No. 14 Mayes, Lost Lake, preparatory to deepening the hole to the 2,800-foot sand which is productive on that dome. This test failed to make a well in a new shallow sand which it tested at 1,831-73 feet, although the sand was well saturated and had given indication of making a good well. On first test, the well blew in, after bailing, as a 2,000,000-foot gasser and started showing some oil but was killed to run tubing. In washing the well back in, it flowed salt water.

GULF COAST FIELDS AND WILDCATS

Week Ending February 13

BARBERS HILL—CHAMBERS COUNTY

Company, farm and location—	Remarks—
Bashara Oil Co.'s No. 2 Tarbutton, Henry Griffith League, 25 ft. W of Texas Gulf Producing Co.'s No. 2 Tarbutton	Spudded.
R. E. Ferrell's No. 2 Wilburn, Henry Griffith League, 215 ft. W of No. 1 in center of 45-acre tract	Drlg. lime 1,740 ft.
Gulf Prod. Co.'s No. 7 Wilburn, Henry Griffith League, 177 ft. W of No. 6	Cap rock 1,215 ft.; cmtd. csg.
McAlbert Oil Co.'s No. 5 Wilburn, Henry Griffith League, 375 ft. of No. 4	Drlg. hard lime 1,390 ft.
Mills Bennett Prod. Co.'s No. 6 Wil urn (W.O.), Henry Griffith League	Rig up to workover; T.D. 5,024 ft.
Rio Bravo Oil Co.'s No. 2 Fisher (W.O.), W. D. Smith Sur., 50 ft. out of NW cor. of tract	T.D. 5,390 ft.; drlg. sidetracked hole in sandy shale 3,578 ft.
Sinclair Oil & Gas Co.'s No. 9 Wilburn, Wm. Hodges Sur., 50 ft. N of S line and 550 ft. W of No. 6	Drlg. sandy shale 4,813 ft.
Sinclair Oil & Gas Co.'s No. 10 Wilburn, Wm. Hodges Sur., 50 ft. S line, 100 ft. W of No. 9	Set 124½ ft. of 5-in. screen 4,849 ft.; comp. flowing 900 bbls., 1 per cent b.s. and water, 250 lbs. pressure, ½-in. choke.
The Texas Company's No. 8 Wilburn, Henry Griffith League, 25 ft. W of No. 5 and 50 ft. N of S line of tract	Drlg. sand, shale and lime 2,614 ft.
Texas Gulf Producing Co.'s No. 1 Scott, Fitzgerald, 125 ft. from S line and 71 ft. from E line of Strip No. 1, Henry Griffith League	Broken rock 830 ft.; cmtd. 16-in. csg.
Texas Gulf Producing Co.'s No. 9-B Kirby, Henry Griffith League, 50 ft. out of SW cor. of J. M. Fitzgerald 50-acre tract and 110 ft. S of N line of Kirby tract	Drlg. salt 1,954 ft.; top of salt 1,374 ft.
Texas Gulf Producing Co.'s No. 9-H Kirby, Henry Griffith League, 87 ft. W and 130 ft. N of No. 8-H	Drlg. hard shale and lime 4,965 ft.

HUMBLE—HARRIS COUNTY

J. E. Burt et al's No. 2 C.O.&G.-The Texas Co. fee, J. B. Stevenson Sur., 450 ft. N of No. 1	Location.
Sun Oil Co.'s No. 27 Bender, W. B. Adams Sur., 250 ft. W of No. 26 in line with No. 25	Drlg. heaving shale 3,174 ft.
E. M. Wilson's No. 8 W. & P. Gulf fee, 95 ft. from W line and 86 ft. from N line of Blk. 15, J. B. Stevenson Sur.	Rig.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 1 Polk-Kuhn-Glass, 260 ft. E and 1,545 ft. S of SW cor. Marshall Beaucham Sur., in the T. J. Notgrass Sur.	Drlg. hard lime 5,685 ft.
The Texas Company's No. 3 Polk, T. J. Notgrass Sur., 500 ft. NE of No. 2 Polk	Rig.
The Texas Company's No. 3 Kuhn, 587 ft. S and 150 ft. W of NE cor. of the Mary E. Hall Sur. No. 2	Cmtd. surface csg. 101 ft.

HULL—LIBERTY COUNTY

Republic Prod. Co.'s No. 145 Dolbear, Jesse DeVore Sur., 200 ft. SE of No. 85 and 200 ft. N of No. 61	Spudded.

(Continued on Page 58)

Pettus Field Given Western Extension

Fifteen Hundred Barrel Well 700 Feet West of Nearest Producer. Two 6,000-foot Tests in Southwestern Texas

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Feb. 15.—Two big wells at the west end, extending the Pettus Field, announcement that another 500 feet will be added to the depth of Evans & Gant's No. 2 Love in southwestern Real County, and the starting of two new 6,000-foot tests in the coastal country were among the important happenings of the past week in this division.

Among the disappointments were the failure of either the Magnolia Petroleum Co.'s No. 1-B Duval Land Co., in northern Duval County, at 1,827 feet, or the same company's No. 1 Seeligson in southern Jim Wells County at 3,424 feet, to make a well. The one in Duval is drilling deeper and the other is waiting on orders.

The Texas Company's No. 3 Gremmel in the Pettus Field in Bee County, came in at 3,890 feet, flowing at the rate of about 1,500 bbls. of oil a day and no water. It is approximately 700 feet west of the nearest producer which is the company's No. 1 Gremmel, which came in for about 1,000 bbls. of oil a day and no water. Buck Oil Corp. first extended the field over a half mile with the No. 1 Ray and No. 1 Gremmel of The Texas Company extended it 500 feet west of that and now the No. 3 Gremmel extends it 700 feet still farther and with bigger production than anything in the field, which to that extent makes the territory on farther west look good.

Also last week McMurray and others brought in their No. 1 Ray, a south offset to The Texas Company's No. 3 Gremmel, making about 32 bbls. an hour at first, but increasing at last reports. Its depth is 3,909 feet. These wells at the west end of the field are considered very encouraging. They are said to be the best wells ever completed in the district. There is still a half mile and more of territory between the Muck Oil Corp.'s No. 1 Ray and the Damac No. 1 Ray which opened this new western extension of the Pettus district. Weinert drilled a dry hole about midway, but J. M. Davis is now down around 3,000 feet on his No. 1-B Ray, which is 600 feet east and 500 feet south of the Weinert dry hole, and if he gets a producer it will tend to prove that the group of wells at the west end are not an isolated and separate pool.

The Texas Company has locations for No. 4 and No. 5 Gremmel on one and two locations west of the No. 3 Gremmel and their No. 2 Gremmel located midway between No. 1 and No. 3 came in the past week flowing initially about 35 bbls. an hour at 3,909 feet, total depth.

J. M. Davis (now Damac Oil Co.), who started the field running to the west, has a block of acreage at Mineral about 5 miles farther west and a little south and most of the acreage between that and the field is held by the Gulf Production Co., Shell Petroleum Corp., Humble Oil & Refining Co. and The Texas Company. Davis is planning to drill a test on his block at Mineral. First announcement was made some weeks ago and in the light of the bigger wells at the west end of the district his test would be watched with considerable interest.

Love Well in Mississippian

Evans and Gant's No. 2 Love, still in the Mississippian at 5,849 feet, is to be deepened another 500 feet and casing is being pulled for that purpose. It will probably have made considerable hole by the time this is read.

The showing of oil recently encountered which nearly filled the hole with oil, but later when tested made too much water, was encountered at 5,835 feet, uncorrected depth. Steel line was run there and the depth corrected to 5,827 feet. White lime encountered above that had been identified by many as the Ellenberger, but later when the bottom-hole cuttings reached the paleontologists the formation had changed to black shale which seemed to preclude the possibility of its being in the Ellenberger, which is entirely white or gray lime. The hole was deepened from 5,827-49 feet and was still in black shale.

It seems agreed that the hole topped the Mississippian at about 5,580 feet. The test had been drilling in characteristic Pennsylvanian formation for many hundred feet and the first white lime encountered was classified by many as the Ellenberger, the last of these cuttings being at 5,825 feet. Then came the oil showing and later cuttings showing black shale and brown limestone which was taken to prove that it had not yet reached the Ellenberger.

Some confusion still prevailed among authorities, but this is gradually being worked out. This confusion seems to have arisen over difference of terms. Some were using an older classification used in North Central Texas before the Big Lake deep wells were drilled. When they were drilled they cored a white lime and identification of fossils showed that what resembled Ellenberger was in reality upper Ordivician, indicating that there was another white lime younger than the Ellenberger below the Pennsylvanian. It is said that paleontologists were helped out in this by Oklahoma paleontologists who had worked extensively in these formations

The paleontologists now seem to believe that this white lime which the No. 2 Love passed through is either Mississippian or Upper Ordivician and a younger formation than the Ellenberger. The cuttings at 5,827-49 feet are black shale and brown limestone and very similar in appearance to the cuttings at 5,580 feet and higher before the hole went into the white lime.

In as much as this territory is quite virgin, careful identification of the formations seems to be the great desire of all the paleontologists and geologists. The Dalglish No. 1 Peterson in northeastern Edwards County, about 25 miles northwest of the Evans & Gant's No. 2 Love, had about 1,000 feet of Ellenberger from 4,225 feet to 5,206 feet and also is said to have had some Mississippian.

Location for No. 3 Love

About three years ago major companies leased up enormous tracts of Edwards, Sutton, Kerr, Bandera, Real, Kimble, Schleicher and Menard, most of it at low rentals and on 10-year leases. Some drilling has taken place over the district but not much, and some argue that thus far no test has been drilled on structure as the drilling of the hole disclosed. The Evans & Gant tests have had some good showings thought to indicate by many that they are at least close to it and with the deepening of the No. 2, which is about a mile south and a little east of the No. 1, comes the announcement that location for the No. 3 will be 600 feet east of the No. 1. Both the No. 1 and No. 2 have had some pretty good showings, the No. 1 making a small well that was on the pump for a time at 3,391 feet and had a good showing at 2,552 feet.

Also the Evans & Gant No. 1 Haby in Real County, about 7 miles south and a little east of the No. 2 Love, standing for some weeks at 2,530 feet, is to be carried on down to 4,000 feet.

6,000-Foot Tests

Cullen & West and Coastal Oil Finding Co. are rigging up for a 6,000-foot test on the A. M. Handley farm in the C. S. Cobb Survey, about 5 miles northeast of the Houston Oil Co.'s Mount Lucas (Cartwright) gas field and it will constitute one of the interesting and important wildcat tests. Geophysical instruments are said to have indicated a high and the block has been carefully worked.

Houston Oil Co.'s last completion in the Mount Lucas Field was the No. 24 Cartwright at 5,323 feet, completed about the middle of January. The test has never been gauged but is putting about 2,000,000 feet of gas in the company's line to Houston and is making about 60 bbls. of gasoline recovered from the drips, no separator having been installed.

Houston Oil Co.'s No. 1-A Boothe at the north end of the field at 5,374-78 feet is also a big gas well and made about 65 bbls. of high gravity oil a day. The company has drilled a number of other deep tests in the field but without success so far as production is concerned. The company's No. 22 Cartwright, with total depth of 6,023 feet, seems to be the deepest by that company. All told, the company drilled nine deep holes and two are big gassers making considerable gasoline.

The other 6,000-foot test will be by the

(Continued on Page 61)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ARANSAS PASS

Company, farm and location—	Remarks:
Big Lake Oil Co.'s No. 1 Giesecke on St. Joseph's Island	Moving in.

ATASCOSA COUNTY

American Central Oil Co.'s No. 2 Mary McConnell, 160 ft. W of E line, 200 ft. S of No. 1, Blk. 138, W. C. M. Baker Sur., 3 miles W and ¼ mile S from Somerset	T.D. 1,665 ft.; drlg.
Glen Mathis' No. 2 Mrs. C. Martin, 100 ft. SE of No. 1	T.D. 2,980 ft.; preparing to resume.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan	T.D. 602 ft.; S.D.
Theo. Hicks' No. 1 Specht, 1,500 ft. from S line, 500 ft. from W line of farm, in Thomas M. Fowler Sur. No. 27 in extreme south point of county	T.D. 1,650 ft.; S.D.
Liles Adams et al's No. 1 Luders, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T.D. 1,100 ft.; standing.

BASTROP COUNTY

E. R. Mart's No. 2 Wm. Bahn, 2,000 ft. from E line, 1,300 ft. from S line of farm in James Sandifer Sur.	Spudded in. S.D. for repairs.
Sun Oil Co.-Humble Oil & Ref. Co.'s No. 1 Powers, 400 ft. to N and E lines of Blk. 197, Bastrop town tracts	T.D. 3,000 ft.; drlg.

BELL COUNTY

Bridwell et al's No. 1 Nichols, 150 ft. to W and N lines of farm, N. Roberts Sur.	T.D. 425 ft.
Bridwell et al's No. 1 G. A. White, 550 ft. to E line, 150 ft. to S line of farm, Nancy Roberts Sur., 4 miles SE from Belton	T.D. 537 ft.; drlg.
W. A. Klecka's No. 1 W. W. Thornton, 500 ft. from N line, 1,058 ft. from E line of tract in R. Roberts Sur.	Location.
J. W. Riley's No. 1 W. S. Chaffin, in M. Griffin Sur.	T.D. 365 ft.; S.D.
Jas. Scroggins' No. 2 Warrick, Ingram Sur.	T.D. 1,432 ft.; S.D.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles S Skidmore	T.D. 2,100 ft.; standing.
Humble O. & R. Co.'s No. 1 Laura Thompson, 6,360 ft. from N line, 15,100 ft. from W line of tr. in Garrett Roache Sur., S part of county	T.D. 5,310 ft.; S.D.

BEXAR COUNTY

Amsden-Ingersoll-Miller's No. 1 Strumberg, 450 ft. to W line, 1,020 ft. to N line of tract, 13 miles SW of San Antonio	T.D. 585 ft.; drlg.

(Continued on Page 56)

SOUTHWEST TEXAS PROVEN AREAS

ECKERT POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Williams et al's No. 2 Strunk, Juan Montez Sur.	Rigging up.

PETTUS POOL—BEE COUNTY

McMurray and H. H. Weinert's No. 1 Ray, 150 ft. from N and E lines of lease in J. W. Williamson Sur.	T.D. 3,900 ft.; comp. 1,000 bbls.
J. M. Davis et al's No. 1-B Ray, 150 ft. to N and E lines of 10-ac. lease, next south of Weinter's, John W. Williamson Sur.	T.D. 2,605 ft.; drlg.
J. L. Mauldin's No. 2 fee	Rigging up in SW cor. of lease.
Slick-Seeligson Inc.'s No. 4 Ray, N offset to Houston Oil Co.'s No. 3 Pettus	T.D. 2,790 ft.; drlg.
Slick-Seeligson, Inc.'s No. 5 Ray, 300 ft. E of No. 3 Ray	Location.
The Texas Company's No. 2 Gremmel, 300 ft. W of No. 1 Gremmel	T.D. 3,909 ft.; comp. 800 bbls.
The Texas Company's No. 3 Gremmel, N offset to McMurray's No. 1 Ray	T.D. 3,890 ft.; comp. 1,500 bbls.
The Texas Company's No. 4 Gremmel	Making location.
The Texas Company's No. 5 Gremmel	Making location.

COOKSEY POOL—BEXAR COUNTY

Chiquita Oil Co.'s No. 3 Cooksey, 430 ft. from E line, 330 ft. from S line of tract in J. W. Rialls Sur.	Location.

SALT FLATS POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, 150 ft. to N line, 750 ft. to W line of tr., A. Floyd Sur.	T.D. 2,704 ft.; standing.
John Storey's No. 1 Dickerson, 150 ft. to N of center of S line of tract, John R. Rains Sur.	Rigging up.

COLE POOL—DUVAL COUNTY

Cole Petroleum Co.'s No. 75 Benavides, 365 ft. from NE line, 150 ft. from NW line, Blk. 8, Sec. 18, Mariana Arispe grant	T.D. 2,300 ft.; drlg.

DARST CREEK POOL—GUADALUPE COUNTY

Humble Oil & Ref. Co.'s No. 3-C Denman, 600 ft. NE of No. 2-C Denman and 700 ft. from W line of lease	Location.

SLICK POOL—DEWITT-GOLIAD COUNTIES

Simms et al's No. 1 J. C. Tom	T.D. 250 ft.; set surface csg.

RANDADO POOL—JIM HOGG COUNTY

O. W. Killam's No. 1 Hinnant, 150 ft. N of NE cor. of Sur. No. 84 in Sur. No. 514	T.D. 1,300 ft.; drlg.

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities' No. 3 Chittim, 24 ft. S of No. 7 Chittim	T.D. 4,850 ft.; standing.

(Continued on Page 56)

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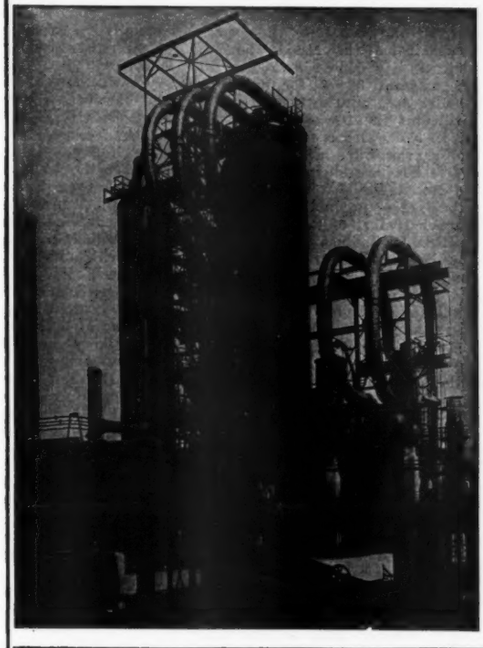

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New Locations in Southeastern Hobbs

Greasewood Well on Southern Edge Finds Less Sand Than North End. Geary Dome Test Gets Water. Midway Dome Development Planned

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Feb. 15.—Pipe line runs from the Hobbs Pool in January aggregated 979,139 bbls. Three locations in the southeastern part of the pool are expected to be made shortly by Midwest Refining Co. and Skelly Oil Co. There were no completions in New Mexico.

Continental Oil Co.'s No. 1 Gadbois, southern edge of the Greasewood Pool in Colorado, found only 20 feet of the Muddy sand as against 36 feet in the north end. Reiter-Foster Oil Co.'s No. 1 Johnson-Juhl is plugging off the Dakota sand. The gas encountered in a stray sand at 1,700 feet in Ohio Oil Co.'s test on the Craig Dome was not commercial and drilling to the original objective is continuing.

In Wyoming, Midwest Refining Co.'s Geary Dome test found a big dose of water in the Dakota. S. H. Keoughan outlines plans for the development of the Midway Dome. Ohio Oil Co. is abandoning its Neiber Dome test, the second deepest hole in the Rocky Mountain area. The deep sands in the Big Muddy Field are to be drilled under a co-operative agreement as to spacing of offsets. A new town is to be built in the heart of the Osage Field.

Ohio Oil Co. is building a rig for an offset to its No. 1 Chapman in the Dry Creek Field in southern Montana. The Cut Bank gas field is now delivering 18,000,000 feet of gas per day to the pipe line.

NEW MEXICO

Lea County

Pipe line runs from the Hobbs Pool in January aggregated 979,139 bbls., bringing the total since proration went into effect up to 19,403,770 bbls. Hobbs is one oil pool which has never been allowed to run wide open as proration has been in effect almost from the beginning. It produced about 90,000 bbls. before the operators entered into an agreement with the state to limit production. The State of New Mexico owns the land upon which 65 of the 148 producing wells are located. Total oil output from Lea and Eddy Counties since the fields came in is given by James F. Hinkle, State Land Commissioner, as 28,838,371 bbls., divided among the pools as follows: Artesia, 3,439,127; Getty, 140,509; Jackson, 468,420; miscellaneous, 74,719; Jal, 1,200,165; Lea, 3,921,361; Maljamar, 270,631; Eunice, 539,892; Empire, 17,575; Cooper, 172,897; Hoggs, 19,493,076. Wyoming, for the first time in its history, yielded first place to New Mexico in oil production in the Rocky Mountain area in 1931.

Three new locations in the southeastern part of the Hobbs Pool in the only area where any drilling has taken place since last summer probably will be made in the next few weeks. Two of these will be by Midwest Refining Co. on the Turner tract in the NW SW Section 34-18-28, and on the Byers tract in the NE NE Section 4-19-38, and the other is expected to be a location by Skelly Oil Co. in the SE NW Section 34-18-38.

Midwest Refining Co.'s No. 11 State, C NE NW Section 4-19-38, cemented the 8⅝-inch at 3,977 feet with 150 sacks, and is drilling out plug. It is expected to be an early completion. The same company's No. 8 Byers, C NW NW Section 3-19-38, cemented the 10¾-inch at 2,793 feet with 400 sacks.

Continental Oil Co.'s No. 6-B State, C SE SW Section 33-18-38, is drilling at 3,775 feet in anhydrite and lime. It had big gas at 3,670 feet.

Eddy County

Leonard & Levers' No. 6 State, C NW Section 28-17-29, Maljamar area, which last week gauged 1,700,000 feet of gas at 2,325 feet, is drilling deeper at 2,340 feet, in lime.

Flynn, Welch & Yates' No. 61 State, SE NE NW Section 32-18-28, Artesia area, is drilling at 1,715 feet in anhydrite.

R. D. Compton's No. 1 Compton, NE NW NE Section 8-18-27, is drilling at 1,065 feet in the red beds. It had 900 feet of fresh water at 1,002 feet.

De Baca County

Matador Oil Co.'s No. 1 Woods, NE SW SW Section 6-4n-20, Salada Creek, is drilling at 3,500 feet in red sand.

Bernalillo County

Norins Realty Co., Inc.'s No. 1 Pajarito grant, NW cor. NE Section 22-9n-1e, is drilling in wash at 1,150 feet and carrying 12½-inch at 1,120 feet.

San Miguel County

Hirshfield Oil Development Co.'s No. 1 Cabra Springs ranch, C NE Section 21-12-22, is drilling at 1,700 feet in salt. The 12½-inch froze at 1,370 feet and 10-inch was run and is being carried at 1,660 feet.

Torrance County

Estancia Valley Carbon Dioxide Development Co.'s No. 1 Roland, NE SE SW Section 12-7n-7e, Wilcox Dome, is shut down at 435 feet. This well recently was reported a completion after plugging back from 1,440 feet to 1,230 feet, having been confused with No. 2 Kutchin. NE SE SW of the same section, which was completed several months ago.

San Juan County

Continental Oil Co.'s No. 24, SW NW SW Section 1-29-19, Rattlesnake Dome, which is drawing close to the objective horizon in the Pennsylvanian formation, is delayed at 6,620 feet by a slight fishing job. A section of the drill stem was dropped, but this was recovered and it is waiting for fishing tools for some broken parts which remained in the hole. Same company's No. 17, C NE Section 2-29-19, is standing at 6,985 feet.

COLORADO

Weld County

Continental Oil Co.'s No. 1 Gadbois, C SE SW Section 24-6n-61, a little more than a half mile south of No. 1 Patterson, the discovery well and the nearest producer in the Greasewood Pool, is preparing to swab for a test and if it shows sufficient oil and pressure to warrant it, tubing will be run for a production test. It topped the Muddy sand at 6,670 feet and at 6,690-6,701 feet it drilled black sandy shale and bentonite, apparently having penetrated the Muddy horizon. This indicates a thickness of 20 feet for the sand as against 36 feet for the Muddy in No. 1 Briggs, a mile to the north, and again indicates the irregularity of that horizon. In No. 1 Briggs the best saturation and gas pressure was encountered about 24 feet below the top of the sand, while in No. 1 Ida Johnson, the south offset, the largest production was found in the upper 10 feet of the sand. Continental's No. 1 Gadbois made several flows by heads after drilling into the sand, but none for the past five days. If the well can not be made to flow after swabbing to bring in the oil and gas and running tubing, it is possible it will be given a shot. At present it hardly is expected to equal the other wells to the north. The company has ample gas in its No. 1 Briggs to repressure No. 1 Gadbois if the quantity of oil is sufficient to justify the cost of putting in a compressor.

When No. 1 Gadbois came in, Platte Valley Petroleum Co.'s No. 1 Patterson, NE SE NW Section 24, a half mile north, dropped off to 30 bbls. per day. At first it was thought that the earlier experience when No. 1 Ida Johnson was drilled in was being repeated, but this proved to be not the case. The Patterson well had paraffined up and when cleaned out production went back to around 100 bbls. per day. Earl Randolph, formerly drilling superintendent for the Indian Territory Illuminating Oil Co. in its Morgan County test, is now field superintendent for the Platte Valley company. This company has extensive holdings in the field, some of which require drilling in the spring. A member of the executive committee states some negotiations are pending, but no deal has as yet been consummated.

Continental Oil Co. has turned back to the owners, Greeley Oil Co., its No. 1 Gadbois, C NW NW Section 25-6n-61, which averaged around 8 bbls. per day on a 10-day swabbing test. The question whether the well will be shot or abandoned has not yet been decided, but in any event it is expected the rig and equipment will be used for another well in the field in which the Greeley company will have an interest.

Reiter-Foster Oil Co.'s No. 1 Johnson-Juhl, C SE SE Section 14-6n-61, a half mile west of No. 1 Briggs, which has been standing at 6,918 feet with 4,000 feet of water from the Dakota, since last November, is rigging up to plugg off the sand. It is not planned, however, to pull the pipe so it can be drilled to the Lakota at a later date, if advisable.

Prairie Oil & Gas Co. has surrended its leases in the Crow Creek district, 10 miles northwest of Greasewood, where it drilled its No. 1 O'Toole and has no plans for additional drilling in that area.

Adams County

Hills Dome Oil Lease Development Co.'s No. 1 Hills, SE cor. Section 27-3s-64, is expected to resume at 3,790 feet about March 1. It is waiting for a supply of fuel oil from the Mountain States refinery at Orchard.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, near Aurora, is bottomed at 5,911 feet and sidetracking bailer.

Larimer County

Mayer Oil Co.'s No. 1 Reed, SW cor. NW Section 28-4n-69, Berthoud Dome, is shut down at 2,752 feet while a new boiler is being installed.

Leonard Smith's No. 1 State, SE cor. Section 36-12n-70, Sand Creek, is preparing to resume about March 1 at 720 feet.

Moffat County

Ohio Oil Co.'s No. 1 Bogenschultz, C SE SE Section 9-6n-91, Craig Dome, set the 12½-inch at 1,734 feet to shut off four water sands above and test a stray sand in the Mesa Verde at 1,742-54 feet which showed considerable gas when drilled. The sand was not commercial and drilling was resumed. The first objective is expected at around 2,800 feet. At 2,075 feet it picked up a small show of oil and gas.

Rio Blanco County

California Co.'s No. 1 Raven-California, NW SE Section 30-2n-102, Rangely Dome, cemented 13⅜-inch casing at 3,575 feet.

WYOMING

Natrona County

Midwest Refining Co.'s No. 11, SE

(Continued on Page 66)

SHOW ON LETHBRIDGE STRUCTURE INTERESTS SOUTHERN ALBERTA

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Feb. 13.—Texas-Imperial's joint test on the Lethbridge structure, LSD 14, Section 22-8-22w4, has encountered a show of crude oil in the top of the Madison lime at 4,551 feet. A statement by J. H. McLeod, production manager of Imperial Oil, Ltd., who had charge of the drilling, says: "At 4,551 feet we found a slight showing of oil and immediately drilling was stopped, as this was our immediate objective. The top of the lime was only touched so we cannot tell what volume of oil there is in the lime. We will set casing to shut off water, allow the cement to set for probably 10 days, and then drill the well in."

Location is on the Fred Senior farm, about 3 miles west of Lethbridge. Test was spudded in December 1, 1930, and Imperial Oil, Ltd., has handled the drilling. The original filing on this structure was done by Benton Oils, Ltd., but Lethbridge Oils, Ltd., secured a large block of acreage, and Imperial Oil, Ltd. and Texas Oil Co. made their deal with Lethbridge Oils on an acreage and royalty basis.

The oil show was encountered in the same horizon as the second show at 4,925 feet in Hudson's Bay Oil & Gas Co.'s No. 1 Keho, 15 miles to the northwest. Parco Oil Co.'s No. 1, in LSD 16, Section 34-1-20w4, considerably south and east, got a similar show in the same horizon at 3,870 feet. The three strikes indicate the possibility of oil in this horizon over a very large area of southern Alberta, with a structure showing a northwest and southeast trend and the dip in the former direction. Parco's No. 1, nearest the border and farthest to the south and east, got the top of the Madison and the accompanying oil show at the highest point.

Pipe line runs for the Turner Valley Field for January aggregated 68,793 bbls., compared with 73,024 bbls. for December. Imperial Oil, Ltd., took 62,006 bbls., comprising 17,978 bbls. of crude naphtha, 36,669 bbls. of discolored naphtha, and 7,359 bbls. of light crude. These figures compared with December totals of 18,604 bbls. of crude naphtha, 39,041 bbls. of discolored naphtha and 8,847 bbls. of light crude, declines being shown in all three classifications. Deliveries to Regal Oil & Refining Co. dropped from 4,643 bbls. in December to 3,662 bbls. in January. On the other hand, the Bell Refining Co. took 3,124 bbls., compared with 1,887 bbls. in December.

Royalite Oil Co. deliveries showed an increase to 10,378 bbls., making it once more the major producing company in the field. No new producers were brought in, but the production of Sterling Pacific Oil Co.'s No. 2, completed in December, was reflected in an increase of

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New Wells in Central Kansas Fields

Ellsworth Arch and McPherson County Furnish Important Completions. Extension or New Pool in Greenwood County

By W. A. Spinney
Staff Correspondent, Kansas Fields

Production in Kansas shows a small increase for the week ending February 13, averaging approximately 98,650 bbls. a day, which is an increase of approximately 850 bbls. over the previous week.

Up to date approximately 25 wells have been completed on the widely known Barton or Ellsworth Arch in the central western part of the State. The wells are scattered in Stafford, Barton, Rice and Ellsworth Counties and have an estimated potential of 35,000 bbls. a day. This area is considered the most active in the State for wildcat development.

The latest well along the arch to make a producer is J. R. Robertson and others' No. 1 Stratman, SE cor. SW NE, Section 1-17-10w, in southwestern Ellsworth County. The well pumped 1,717 bbls. of oil the first 24 hours from Silicious lime at 3,267-77 feet. Derby Oil Co.'s No. 1 Stratman, NE cor. NW NE, Section 12-17-10w, a half mile south, made 200 bbls. of oil from the Silicious lime at 3,262-85 feet.

Prairie Oil & Gas Co.'s No. 1 Stratman, SW cor. NW SE, Section 1-17-10w, is a new location offsetting Robertson and others' No. 1 Stratman.

New Pool in Greenwood

A new producing area was opened in Greenwood County during the week when J. R. Hays and J. Harwood's No. 1 Carson, NE cor. NW, Section 33-23-11, found the Bartlesville sand at 1,973-93 feet, from which oil rose 400 feet in the hole in a short time. The well is a half mile from the nearest production, and is three-quarters of a mile south and a quarter of a mile west of the Phillips Petroleum Co.'s No. 9 Beal, which was recently completed for 570 bbls. of oil in 20 hours. Hays & Harwood's No. 1 Carson is being cleaned out preparatory to shooting and some estimated the test at 250 to 400 bbls. a day. The new well appears to have opened another producing sector in Greenwood County, a district that continues to yield new pools regularly, and is one of the oldest deep sand fields in the State.

Derby Oil Co.'s No. 1 Rainbow, NW cor. SE, Section 33-22-7w, is a wildcat test recently announced for Reno County. The company expects to move material out in a few days.

The same company has completed the deepening of another chat well in the Eastborough Pool, in Sedgwick County, to the Viola lime. The well is No. 1 Eastborough, in Section 19-27-2, and it is swabbing 22 bbls. of oil from the Viola at 3,253-57 feet. The well will be put to pumping. It offsets Fisher & Lauck's No. 3 Trustee, which is making 25 bbls. of oil an hour from the Viola lime at 3,250-54 feet.

Little Waste of Gas

During a hearing before the Kansas Public Service Commission held recently, it was brought out that little if any gas was being wasted in the Ritz-Canton Pool, in McPherson County. The potential output of the field is estimated at 937,000,000 feet a day, from 54 gas wells and 13 combination oil and gas wells, according to a report by J. Woodrow, special investigator for the commission.

The hearing was held as the result of a petition filed with the commission claiming that gas was being wasted. Protection of the producing gas horizon to prevent it being damaged by water from the chat formation or lower sands is being practiced generally in the field. During the hearing the Derby Oil Co. claimed it had been especially careful in cementing the casing in its wells producing from the chat formation and from the Viola lime formation, in order to eliminate any danger of flooding the gas sands.

An example was presented, showing that in a well drilled by the Wolf Creek Oil Co. on the Lacquement lease in the Ritz-Canton Field, the 10-inch casing was not pulled, but the 8-inch casing was used to secure a shutoff. The well caused considerable discussion. After the well was completed the Derby Oil Co. purchased an interest in it and the lease. The Derby officials assured the commission, that if it ever became necessary, the well will be cemented.

A. L. Derby, president of the Derby Oil Co. announced that the company has been careful in drilling its wells and that all of its producing wells have been properly completed. J. Woodrow confirmed the statement. C. E. Brock, superintendent of production with the Kansas Gas & Gasoline Co. and the McPherson Oil & Gas Co., testified that his company is able to take only approximately 3 per cent of the gas produced in the Ritz-Canton Field. This amounted to around 25,000,000 to 30,000,000 feet a day in the winter months and in the summer it has been taking approximately 15,000,000 feet a day. He testified his company was expanding its market outlets and during the last few months has added 38 distribution systems, mostly in northern Kansas and southern Nebraska. He said the amount of gas purchased will be increased with the consumer demand.

The commission also considered the method in which new potentials will be taken in the Ritz-Canton Pool. It is expected the new potentials will be taken during March.

Extension or New Pool

The Voshell Pool, in McPherson County, was either extended to the south or a new area was opened by Western Oil Corp.'s No. 1 Wall, NE cor. SW SE, Section 21-21-3w, which found oil in the chat at 3,088-3,130 feet and the total depth was 3,190 feet. Oil rose 1,800 feet in the hole in a short time. The operators expect to tube the well and made a production test. Some estimated the well at 100 bbls. a day. It is located on Shell Petroleum Corp.'s acreage and is 1½ miles south of production in the Voshell Pool. It is also 5 miles north and 1 mile east of the F. Hollow's No. 1 Church acre, Section 20-22-3w. The well may open a new producing area between the above mentioned areas. Some express the opinion that it may be some time before the well is connected to a pipe line as the production in the Ritz-Canton Field is restricted to 13 per cent of its potential.

Slick, Pryor and Lockharts' No. 1 Stuckey, SE cor. SW SW, Section 27-20-3w, in the north end of the Voshell Pool, in McPherson County, is being deepened from the chat formation to the Simpson sand. It has been making oil and gas for about two years.

The new wildcat well near the townsite of McPherson, Shell Petroleum Corp.'s No. 1 Johnson, SE cor. SW SW, Section 35-19-3w, McPherson County, which is 6 miles from the nearest production, the Ritz-Canton Pool, on the east, and the Voshell Pool, on the south, is estimated to be making between 300 and 500 bbls. of oil a day, spraying into the slush pit, and the gas is estimated at 10,000,000 feet a day. The well is shut down until the operators decide what method will be followed in handling the gas that is escaping between the 8 and 10-inch casing.

Two new operations were reported near the new wildcat well. The new locations were Shell Petroleum Corp.'s No. 1 Helstrom, SW cor. NE, Section 35-19-3w, it being located about three-quarters of a mile north of the discovery well. The other location is the Mid-Kansas Oil & Gas Co.'s No. 1 in the NW cor. SE, Section 35-19-3w, which is a south offset to the Shell's new location.

During the week the landowners in the Ellsworth Arch area have received the rentals on 12,000 acres of leases held by the Prairie Oil & Gas Co. The company may drill several test wells on the acreage during the summer.

R. J. McMurray's No. 1 Wetherall, in Section 20-28-10w, a wildcat in western Kingman County, is having trouble drilling through the quicksand found at 300 feet. The test is seeking gas to supply nearby towns.

Kingman County is becoming active, Wentz Oil Corp. has had a seismograph survey made of the county, and recently leased considerable acreage in the county. Among the leases were SE, Section 19-27-5w, S half SE, Section 21-27-5w, S half SE, Section 20-21-5w, NW, Section 20-27-5w, NW, Section 28-27-5w.

It is reported that there has been considerable leasing activity in the eastern part of Pratt County during the last two weeks. The territory included in the campaign is located in Townships 27-28-29, Ranges 11-12-13. This area is a wildcat district and at the present time there is no production in the county.

The Kansas Public Service Commission announced that it will hold hearings on oil matters at Wichita every alternate Friday, starting February 19, when the question and method of taking new potentials in the Ritz-Canton Field will be heard.

Shallow Gas Completions

The development of Labette County gas area is continuing, several shallow gas wells were recently completed and considerable acreage has been leased on which test wells are expected to be drilled. Overton & Woolfolk recently completed four shallow gas wells in Section 5-33-19, Labette County, from sands found at 538-800 feet with a total open flow of 1,000,000 feet a day. Same operators also completed two other gas wells in Section 33-33-19, with a total open flow of 700,000 feet a day from sands at 770 feet. Same operators have also completed wells in Section 9-33-21, Labette County, from depths of 365-456 feet which average 250,000 feet a day. The gas is being marketed in the surrounding towns.

Barton County

Syndicate Oil Co. and Miller's No. 1

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WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Syndicate Oil Co.'s No. 1 Bortez, NW SE SE, Sec. 3-18-12w	T.D. 3,751 ft.; abnd.
Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w	S.O. 3,225-28 ft; 3,304-10 ft. wtr.; fishing 3,375 ft.
DICKINSON COUNTY	
Severe et al's No. 1 Lavengood, NE SW, Sec. 13-13-2	S.D. 4,752 ft.
ELLSWORTH COUNTY	
R. Gear et al's No. 1 Sanberth, C SW SE, Sec. 29-16-9w	S.D. 50 ft.
Alyward et al's No. 1 Stratman, SE NW SE, Sec. 1-17-10w	Siliceous 3,255-71 ft.; 117 bbls. 2 hrs.; shut in; estimated 2,000 bbls.; no pipe line connections.
Aladdin Pet.'s No. 1 Stoddenberg, C SW, Sec. 22-16-10w	Siliceous lime 3,332-47 ft; estimated 1,500 bbls. a day; shut in.
FINNEY COUNTY	
National Ref. Co.'s No. 1 Wells, C SW, Sec. 13-23-30w	S.D. 3,805 ft.
HARVEY COUNTY	
Liggett et al's No. 1 Davis, SW SE NE, Sec. 7-24-1	S.D. 2,500 ft.
KINGMAN COUNTY	
Skelly Oil Co.'s No. 1 Miles, NE cor., Sec. 30-27-10w	1,635-40 ft., 2,000,000 ft. gas; at 2,005-20 ft., 6,000,000 ft. gas; at 1,123-42 ft., 3,000,000 ft. gas; showing oil 3,385 ft; T.D. 3,504 ft.
Panhandle Drlg. Co.'s No. 1 Wetheral, C SE NW SW, Sec. 20-28-10w	Drlg. 100 ft.
McPHERSON COUNTY	
Twin Drlg. Co.'s No. 1 Farver, SW SE, Sec. 16-20-1w	Drlg. 2,510 ft.
Shell Pet. Corp.'s No. 1 Johnson, SE SW SW, Sec. 35-19-3w	Top chat 2,984-3,007 ft.; 10,000,000 ft. gas and 300 bbls. oil; shut in.
MORTON COUNTY	
Hydraulic Oil Co.'s No. 1 State Land, NW SE, Sec. 22-34-43w	T.D. 3,640 ft; temp. abd.
MORRIS COUNTY	
Allender et al's No. 1 Wycoff, C SW SE, Sec. 5-17-7	S.D. 105 ft.
Urschel et al's No. 1 Bersuch, NW SE NW, Sec. 10-17-7	Fishing 915 ft.
Hankerson et al's No. 1 Cessman, SW SE, Sec. 24-16-9	S.D. 2,625 ft.
NORTON COUNTY	
Richards et al's No. 1 Colby, Sec. 17-4-21w	Rig.
OSAGE COUNTY	
Briggs & Smith's No. 1 Wood, SE NW, Sec. 21-14-15	S.O. 2,190-2,200 ft; S.D.
RAWLINS COUNTY	
J. G. Durham et al's No. 1 Weaver, SE cor., Sec. 3-2-35w	S.D. 3,925 ft.
RENO COUNTY	
Jarvis & Wright's No. 1 Rainbow, NW SE, Sec. 33-22-7w	Location.
RICE COUNTY	
Gypsy Oil Co.'s No. 1 Steckel, C NE NW, Sec. 31-19-10w	Drlg. 2,035 ft.
RUSSELL COUNTY	
J. Brennan's No. 1 Waly, CNL E½ NW, Sec. 29-13-11w	Rig.
T. Palmer et al's No. 1 Pasek, C SE, Sec. 3-14-11w	Drlg. 2,300 ft.
RUSH COUNTY	
Skelton et al's No. 1 Brock-Hartman, SW SE NE, Sec. 4-18-16w	S.D. 50 ft.
SALINE COUNTY	
Twin Mounds Oil Co.'s No. 1 Weis, C W½ NE NW, Sec. 20-13-4w	S.D. 2,710 ft.
SHERIDAN COUNTY	
Flo et al's No. 1 Shoemaker, SE SW, Sec. 27-7-26w	Drlg. 4,120 ft.
STAFFORD COUNTY	
Rosenthal, Stanolind and Amerada's No. 1 Gray, C NE, Sec. 11-24-31w	S.O. 3,829 ft; 500 ft. oil in hole; Siliceous lime 4,017-52 ft; wtr; S.D; shot with 120 qts. 3,840-70 ft.; abnd.
STEVENS COUNTY	
Argus Prod.'s No. 2 Christopher, C NE, Sec. 10-33-39w	S.D. 5,521 ft.
SUMNER COUNTY	
Trees Oil Co. and Shell's No. 1 Springate, NE SE SW, Sec. 6-34-2	Drlg. by csg. 2,285 ft.
WASHINGTON COUNTY	
Sincox et al's No. 1 Penwell, NW SE NE, Sec. 16-3-3	S.D. 1,720 ft.

California Awaiting Legal Outcome

Test Case on Gas Conservation Law and Referendum on Sharkey Bill Will Determine Future. Activity at Dudley Ridge

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Feb. 13.—There was considerably less tension during the week than was evident earlier in the month and yet no substantial improvement in the general situation has taken place. Matters are just drifting along but may suddenly flare up again, especially if competition becomes too keen among marketers. The operators general committee on statewide curtailment appears to have washed its hands of the entire situation following the flat refusal of several larger independent operators to effect additional curtailment in the Long Beach, Huntington Beach and Santa Fe Springs Fields. As a result, state production of crude continues to hover around 500,000 bbls. per day with very little prospect of any further curtailment in the near future. The failure of producers to curtail crude production to the maximum allowable of 456,700 bbls. per day has prevented an upward revision in crude and refined oil prices.

Both producers and refiners are being adversely affected by the failure of operators to reduce production in conformity with the new curtailment program which became effective January 1. A number of independent refiners have been obliged to suspend operations and a number of producers are finding the sledding equally tough. Operators selling current production to refiners on a consignment or net-back basis will receive less per barrel than heretofore if the gasoline structure continues as weak as it has been during the past two weeks. Major companies have not made any new crude purchase contracts for several months although most of them have made additional pump connections on a day-to-day basis. This crude, as well as oil purchased on term contracts, is taken at the posted price covering the field in which it is produced.

Developments during the next 60 days may have an important bearing on the trend during the latter part of this year. The outcome of the test case involving the gas conservation law and the result of the special election to be held on the Sharkey conservation bill on May 3 may change the entire aspect and eliminate the necessity of mutual co-operative curtailment. It is the consensus that the existing curtailment program will be unnecessary if the Sharkey conservation bill is ratified and put into effect. Some are inclined to believe, however, that the umpire's curtailment department will be continued either as a component part of the proposed setup or to function in an advisory capacity. The apparent indifference of the general committee on statewide curtailment is attributed to the committee's inability to convince producers of the advantages accruing from additional curtailment and because of the possible ratification of the Sharkey conservation bill on May 3.

Kettleman North Dome Association

The Kettleman North Dome Association, which assumed an operating status on April 1, 1931, produced 5,315,820 bbls. of crude oil during the nine months ending December 31, 1931. In addition to this crude oil, the association's wells produced 34,470,996,000 feet of natural gas, from which was extracted 46,030,814 gallons of natural gasoline. It is interesting to note that most of the association's production during 1931 was obtained in the last five months of the year as there was only one well producing 2,993 bbls. per day during the first month of the association's existence. During December, 1931, the association produced 25,438 bbls. per day, compared with an average daily production of 19,350 bbls. for the entire period from April to December, inclusive.

In conformity with contractual obligations, the North Dome association delivered a total of 8,000,000,000 feet of natural gas to the Milham Exploration Co. and sold 9,000,000,000 feet to the Pacific Gas & Electric Co. and the Southern Fuel Co. The association has seven wells producing in the North Dome of Kettleman Hills in addition to one well shut in and one gas well which is operated on a part time basis, depending upon the requirements of the various gas companies. Based on prevailing prices, production of the Kettleman North Dome Association from April 1 to December 31, 1931, had an estimated valuation of $5,300,000. Total capital outlay and operating expenses during this period approximated $3,885,000, leaving a balance of $1,515,000 indicated net profits. The association, a nonprofit organization, settles with its members on a monthly basis both for distribution of cash receipts or production as well as for expenditures. When the association was formed, the total assets contributed by members approximated $8,000,000. These assets, including wells and equipment, have increased in value to approximately $10,000,000. These valuations do not include the valuation of properties as the various members of the association retain their leasehold rights.

Drilling Operations

The Kettleman North Dome Association is drilling six wells in the North Dome and if normal footage is made between now and the date of completion, three of them should be finished during March and the remainder a short time later. Tentative plans do not call for the starting of any additional development work in the near future, although additional drilling may be necessary if new wells are drilled on adjoining acreage. The Union Oil Co. has not yet spudded in its No. 2 Amerada King in the west end of the North Dome and no work is contemplated until some agreement is reached with the Standard Oil Co. which owns the adjoining acreage. The Union is understood to have proposed to drill along the line of the Standard's lease in the same section but this would necessitate immediate offsetting by the yatter company. The Kettleman North Dome Association did not wait for the Union and Standard to settle this drilling question but instead spudded in its No. 58-29 J, which adjoins the Union and Standard's acreage in Section 29-21-17. This well of the association is the most westerly project started in the North Dome up to the present and will extend the western limits of the field if commercial production is secured. The Superior Oil Co. has started rig construction for No. 4 Huffman, an offset to the association's new project, and should begin making hole some time during the next 10 days.

The North American Consolidated has two fishing jobs on its hands in the North Dome, although the mechanical trouble which developed in No. 1 Elsinore early in the week may not be as serious as that which has been holding up progress in No. 1 Blauvelt. The former well has casing frozen at 8,356 feet, while the latter, bottomed at 9,500 feet, has 7,450 feet of drill pipe in the bottom of the hole. The Bolsa Chica Oil Co., after deepening No. 1 Ferguson to 7,767 feet, has washed out the perforations and is running tubing for another production test. This well has shown an increasing quantity of gas during the past few weeks and, while the company hopes to secure commercial production, petroleum engineers are dubious over the outcome as the well is believed to be still in the brown shale which overlies the productive Temblor. The Petroleum Securities made a little progress in No. 1 Burbank, a test in the Middle Dome which has been held up with mechanical trouble, but still has a little better than 5,000 feet of 9-inch pipe to recover before any corrective work can be undertaken. If this hole can be cleaned out, the company will endeavor to determine the source of the water which accompanied the production of this well several weeks ago and eliminate this unfavorable factor.

Buttonwillow

The Milham Exploration Co. spudded in No. 10 Kern, a new well in the Buttonwillow Field of Kern County, early in February, and in doing so reveals the probability that the company will consistently increase its potential daily production of gas in this field during the year. When the Milham interests discovered this field a few years ago they expected to be able to put the field on commercial gas production. The subsequent discovery of commercial production by this company in the North Dome of Kettleman Hills forced a change in the Milham's original program with the result that instead of putting the Buttonwillow gas field on a commercial production basis, the company fulfilled its contract with the Pacific Gas & Electric Co. by delivering gas from the Kettleman North Dome instead of Buttonwillow.

The advisability of developing a substantial potential production of gas at Buttonwillow is plain in view of the probability that gas production of the Kettleman North Dome may be reduced either through enforcement of gas conservation law or the Sharkey oil conservation measure. In the event that production of gas is substantially reduced in the Kettleman North Dome, the Milham will be in a position to pick up the necessary load by opening its wells in the Buttonwillow gas field which, with the exception of a very short period, have been shut in since completion. The Milham recently completed its No. 2 Kern in the Buttonwillow Field, flowing approximately 25,000,000 feet of dry gas per day from 2,702 feet. This well, together with other producers in the field, has been shut in and will continue to remain inactive until a market is available for this dry gas.

Dudley Ridge

Prospectors have been quite active in the Dudley Ridge-Tulare Lake region for several months and this district will undergo additional development if and when a market is available for commercial gas production. Up to the present, the gas companies have been able to secure sufficient gas to meet requirements from the various oil fields throughout the State, with the result that exclusive gas fields have been unable to go on commercial production. Oil gas is more desirable than the gas from dry gas fields because it has a higher B.t.u. value and at the same time eliminates the waste of this natural resource which the gas companies, for business reasons, are anxious to conserve. During the winter the General Petroleum has been making commercial deliveries from two wells in the Goleta gas field of Santa Barbara County but, with this exception, all gas consumed in California is gas from oil fields. The General Petroleum opened up its two gas wells in the Goleta gas field on November 1 and will probably shut them in again along about the first of March, unless the production of gas from oil fields drops below requirements. The Eagle Oil & Gas Co.'s well in the Dudley Ridge-Tulare Lake region blew out early in the week from 1,125 feet but subsequently sanded up. This well, in Section 15-23-20, blew in prematurely doing approximately 20,000,000 feet of dry gas per day. It blew in during the course of a fishing job and just previous to sanding up was making considerable mud and sand. There are two other wells under way in the Dudley Ridge-Tulare Lake region which may be given production tests within a few weeks.

Long Beach

The Hub Petroleum Corp. recompleted its No. 1 Williamson in the Long Beach Field of Los Angeles Basin during the week and this well was returned to production flowing 465 bbls. of 29.2 gravity oil and 575,000 feet of natural gas per day from 8,517 feet. The Beach Petroleum Corp. also chalked up a completion at Signal Hill but this company's No. 1 Harlow was good for only 118 bbls. of 23.6 gravity oil per day on the beam from the shallow sand at 4,704 feet. There is very little work under way in the Long Beach Field, although operators in both this and the Santa Fe Springs Field are reconditioning a number of producing wells which are either on or below the border line between commercial production and production below cost.

Inglewood

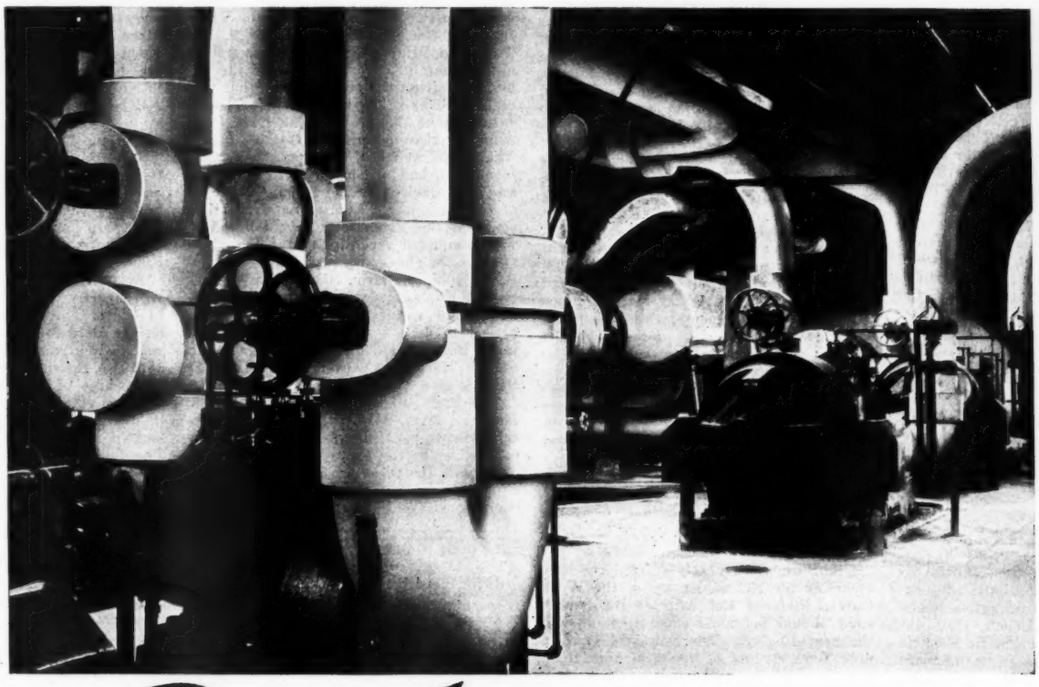
In the Inglewood Field of Los Angeles Basin the Allison Syndicate's No. 1 Moy-

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	Jan. 30, 1932		Jan. 23, 1932			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal—domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	333,154
Gasoline	218,245	31,178	262,038	37,434	585,984	1,177,199
Foreign exports:						
Crude oil	168,038	24,005	59,993	8,570	622,229	707,585
Fuel oil	137,234	19,605	52,583	7,513	745,994	1,091,895
Diesel and gas oil	.....	.....	119,040	17,006	128,069	306,024
Gasoline	107,295	15,328	221,864	31,695	879,727	1,214,349
Kerosene	5,710	816	85,631	12,233	184,677	3,022
Naphtha distillates	.....	.....	41,175	5,882	41,175	.....
Coastwise—domestic:						
Crude oil	400,359	57,180	412,870	58,981	1,386,703	1,250,837
Fuel oil	321,626	45,947	313,837	44,834	1,493,382	1,594,502
Diesel and gas oil	34,831	4,976	43,572	6,225	226,474	197,545
Gasoline	221,711	31,673	234,585	33,515	1,002,530	940,715
Kerosene	10,489	1,498	.....	.....	16,527	44,479

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Foreign exports:						
Crude oil	.....	.....	57,325	8,189	57,325	.....
Fuel oil	.....	.....	.....	.....	330,408	55,960
Diesel and gas oil	.....	.....	69,671	9,953	110,462	.....
Gasoline	269,521	38,503	.....	.....	269,521	96,750
Kerosene	.....	.....	96,080	13,726	106,486	94,961
Coastwise—domestic:						
Fuel oil	159,751	22,822	74,591	10,656	234,342	312,888
Diesel and gas oil	13,140	1,877	.....	.....	110,648	.....
Gasoline	95,246	13,607	.....	.....	414,411	233,174
Kerosene	.....	.....	.....	.....	.....	16,877



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Alumino Hi-Temp Cement
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nier was wet on a production test and will require another cement job. This outpost, located rather well out on the northwestern edge of the field, was bottomed at 6,110 feet and finished with a 4¾-inch liner carrying 80 feet of perforated. On the southern edge of the field the Baldwin Hills Syndicate is temporarily held up with mechanical trouble which developed when a formation tester froze in the hole. This well, No. 1 Sentous, is bottomed at 4,036 feet and has cored 20 feet of oil sand which looked exceptionally promising. The Baldwin Hills Oil Co. has just started rig construction for No. 9 in the extreme southwestern corner of the Brownmoor property and tentative plans call for spud to be made on February 20. This well is on the north flank but is better located structurally than Allison Syndicate's No. 1 Moynier. This development work in the Inglewood Field is being watched with extreme care because if either of these three projects secures commercial production it will lead to offset drilling, which in turn may precipitate a general drilling campaign. Two additional productive zones are known to exist below present productive horizons in the Inglewood Field and operators consequently do not relish the thought of having to cope with any additional production at the present time. The first zone in this field reached a peak of approximately 120,000 bbls. per day during competitive drilling conditions experienced several years ago and it is likely the next zone would very easily exceed this figure under intense development.

Huntington Beach

Superior Judge Beaumont of Fresno, temporarily assigned to the Huntington Beach district, signed a stipulated judgment in the City of Huntington Beach vs. The Huntington Beach Co., the Standard Oil Co. and the Pacific Electric Co. heard in the courts of San Diego during the summer of 1931. This judgment awards to the city of Huntington Beach a beach frontage of 3,750 feet and prohibits the defendants from laying railroad tracks or the drilling of additional wells between the tide line and the present line of producing wells along the Pacific Electric Railway's right of way. The controversy over the disposal of waste water from oil wells in the Huntington Beach Field was ended early this week as the result of a conference between city officials of Huntington Beach and the Huntington Beach Waste Water Disposal Association. The city council decided to permit the use of the Huntington Beach storm drains for waste water disposal under certain regulated conditions. In conformity with this decision, the Waste Water Disposal Association must construct a series of waste water cleaning tanks and must not release the contents of these tanks under any consideration. The city of Huntington Beach will appoint an agent whose salary and expenses will be borne by the Waste Water Disposal Association and who will keep the outlet tanks under lock and seal.

Playa Del Rey

Although drilling operations in the Playa Del Rey Field of Los Angeles Basin were reduced to a negligible factor several months ago and have subsequently declined to such an extent that there are only two or three drilling wells under way, it appears probable several new projects will be spudded in during the next 60 days. The amount of new work to be started depends entirely upon the leniency of the Union Oil Co.'s lessors, who have recently demanded additional development. The Union was obliged to go back to its No. 1 Vidor, finished during the summer of 1931, as a result of the insistence of this landowner. The Union's No. 1 Vidor, in the extreme southeastern part of the field, was shut in immediately on completion after it failed to result in substantial production. It was put on a gas lift early in January and is producing at the rate of 200 bbls. per day, the oil being clean and testing 22.1 degrees A.P.I. In accordance with lease requirements, the Union has started rig construction for No. 4 Del Dey on the Townsite lease adjoining the Vidor property on the northwest. The Union is obligated to pay a minimum royalty of $50,000 per year for five years on the Del Rey lease and $25,000 yearly thereafter. Because of this lease requirement the Union must resume drilling operations and produce sufficient oil to guarantee the minimum requirements or arbitrarily charge off the difference as a total loss.

Coyote

The Standard recently started rig construction for No. 51 Emery in the West Coyote Field of Los Angeles Basin and spud should be made some time during the next 10 days. The Standard is running four strings of tools in this field and three of the wells under way on the Murphy Coyote property should be tanking oil within 30 days. This development work is being done in conformity with lease requirements and also for the purpose of keeping its field department intact as far as possible. The Union has been following a similar precodure in the Dominguez Field, where a small but consistent amount of drilling has been under way for several months. Production of the Union and Standard in both fields is being governed by the curtailment program and despite the fact that several substantial producers have been finished, field production has been prevented from exceeding the allotment by pinching in new wells and suspending production activities in older completions. The Union's operations in the Dominguez Field cover three wells, one not yet spudded. The Shell is redrilling and deepening No. 101 Reyes, a former upper zone producer, and is making hole in a new well, No. 42 Reyes, a recent spud. The Associated

(Continued on Page 64)

DISAPPOINTING SHOWING IN TEST BEYOND EAST POOL IN MICHIGAN

By George A. Whitney

MOUNT PLEASANT, Mich., Feb. 13. Scouts and operators were much surprised at the disappointing showing of the test of Milfred Wells and George Miller on the H. C. G. and Martha Thom farm, in the S half SE, Section 9, Lee Township, Midland County. This well is approximately 2½ miles east of the 50-bbl. wildcat on the Hewitt farm, that was recognized as a key well to the eastward extension of the prolific Far East Pool, where numerous large wells were found. The Thom well is 60 feet in the Dundee formation, had no showing of gas or oil, and was drilling in hard shale in hopes of finding a pay. Approximately 3 miles south of the Thom farm test a dry hole was completed recently by the Theodore Oil Co. in the southwest corner of the S. N. Robinson farm, SW SW NW, Section 26, same township. In Jerome Township, same county, Fred Sias secured a permit to drill a test 326 feet from the north line and 113 feet from the east line of the Merrifield-Nelson farm, NE NE SW, Section 17.

The Pure Oil Co.'s test on the Frank Howland farm, SW cor., Section 23, Porter Township, Midland County, and an east offset to the Otway farm well, was dry, while the Otway well drilled in some time ago made 50 bbls. initially. Same company's No. 1 on the Joe Novak and others farm, in the SE NW NE, Section 18, Greendale Township, same county, and on the southeast edge of the old Chippewa-Greendale Pool is reported showing for a light pumper, and will be given a shot in hopes of increasing its output of crude. One of the next wells due for completion for the Pure Oil Co. is No. 1 on the Mason-Kidder farm, NE NE NE, Section 17, Greendale Township, Midland County, and in the northeast corner of the farm.

It is reported that J. M. Markle, trustee, will resume operations in a wildcat on the H. Simms farm, NE SE and E half NW SE, Section 4, Mount Haley Township, Midland County, which was shut down several weeks ago at around 1,050 feet.

According to report W. J. Sovereign will shortly start operations on a test in Clare County, the first to be drilled on the Pere Marquette Railway right of way, which runs through the Clare Field and also through Vernon and Bloomfield Townships of Isabella County. A combination rotary-standard rig is to be used in drilling the Clare test, which will be located near the No. 1 McKay gas well. The drilling contractor is the Atha Drilling Co.

The test of Lewis D. Megrtine on the

(Continued on Page 64)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Barnsdall, No. 1 Los Alamos, Santa Barbara Co.	31- 8-33	1,712	sd. sh. drilling
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	8,566	sidetracking
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-35	3,450	suspended
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	6,912	plug 4,386 ft.
General Pet., No. 4 Goleta, Santa Barbara Co.	3- 4-29	1,146	sd. sh. drilling
General Pet., No. 133 Goleta, Santa Barbara Co.	21- 4-28	2,030	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	2,053	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	2,050	suspended
Bowles Oil Co., No. 140 Goleta, Santa Barbara Co.	21- 4-28	2,065	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	2,004	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	2,012	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	2,010	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	2,010	suspended
Bellview Oil Co., No. 159 Goleta, Santa Barbara Co.	24- 4-29	2,099	suspended
Johnson & Strickland, No. 1-A Goleta, Santa Barbara Co.	19- 4-27	4,886	suspended
The Texas Company, No. 2 Carpinteria, Santa Barbara Co.	34- 4-24	718	suspended
Sovereign Oil Co., No. 1 Guadalupe, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Pacific Finance Co., No. 1 Carpinteria, Santa Barbara Co. Tideland		2,011	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Bell, H. H., No. 1 South Mountain, Ventura Co.	22- 3-21	2,230	rd. sh. drilling
Pure Oil Co., No. 1 S. F. Canyon, Ventura Co.	15- 4-21	2,591	suspended
Union, No. 1 Calumet, Ventura Co.	3- 3-19	....	location
Woodruff Oil Co., No. 1 Miguelito, Ventura Co.	4- 3-24	....	location
Graham & Loftus, No. 1 Goose Lake, Kern Co.	20-27-22	5,898	sd. sh. drilling
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	2,615	cleaning out
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	suspended
Milham Expl. Co., No. 10 Buttonwillow, Kern Co.	5-28-23	360	sd. sh. drilling
Purman, T. H., No. 1 McKittrick, Kern Co.	22-29-21	2,850	sd. sh. drilling
Welport Oil Co., No. 8 McKittrick, Kern Co.	26-29-21	1,100	sd. sh. drilling
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,380	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21	8,103	br. sh. drilling
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	suspended
Rio Cal Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Wicker, Sy., No. 1 Arvin, Kern Co.	12-30-28	3,850	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,910	suspended
Osborn, Colter, No. 1 Weed Patch, Kern Co.	15-30-29	3,465	suspended
Osborn, Colter, No. 2 Weed Patch, Kern Co.	15-30-29	2,005	pump 25 B/D
Fullerton Oil Co., No. 3 Semitropic, Kern Co.	25-27-23	735	core hole
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,600	suspended
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,225	fishing
Signal Oil Co., No. 1 Blackwell Corner, Kern Co.	15-26-19	106	suspended
United Kern Pet., No. 1 Mojave, Kern Co.	26-10-14	1,065	suspended
Meridian Oil Co., No. 1 Mojave, Kern Co.	11- 9-15	4,000	suspended
Kendall Dev. Co., No. 1 Mojave, Kern Co.	27-11- 9	1,079	hd. sd. drilling
Harding, J. B., No. 1 Mojave, Kern Co.	5-10-10	1,030	redrilling
Barnsdall Oil Co., No. 1 Tejon, Kern Co.	15-11-20	3,440	sd. sh. drilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Descanso Oil Co., No. 1 Tejon, Kern Co.	31-11-19	1,047	sd. sh. drilling
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	6,197	suspended
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	2,390	suspended
Kent & McDonald, No. 1 Carrizo, San Luis Obispo Co.	3-32-22	2,630	suspended
Trav-El Oil Co., No. 1 Carrizo, San Luis Obispo Co.	7-32-22	2,450	cleaning out
Indian Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	26-31-12	3,380	cleaning out
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,070	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,160	suspended
Emerich Oil Co., No. 1 Atascadero, San Luis Obispo Co.	13-28-12	1,730	cleaning out
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	1-29-12	1,650	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	2,280	suspended
Brown, W. F., No. 1 Parkfield, Monterey Co.	15-23-14	1,051	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Niel, W. B., No. 1 Dudley Ridge, Kings Co.	32-22-20	rig	rigged up
Guess, E. B., No. 1 Dudley Ridge, Kings Co.	12-23-22	1,996	suspended
Irma Investment Co., No. 2 Dudley Ridge, Kings Co.	7-23-20	1,224	testing
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-23-20	1,125	blew out
Valley Expl. Co., No. 1 Dudley Ridge, Kings Co.	12-23-19	1,302	cemented
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	5,894	cleaning out
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	suspended
Tulare Basin Gas Co., well No. 1, Kings Co.	2-23-19	1,100	bl. sh. drilling
Tulare Oil Co., No. 1 Corcoran, Tulare Co.	20-22-22	rig	suspended
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,200	suspended
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Gravity Expl. Co., No. 1 Alpaugh, Tulare Co.	11-24-23	rig	suspended
Ellis & Sanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,920	plug 1,487 ft.
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	7,694	suspended
Napa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	2,848	cemented
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	2,120	suspended
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	1,040	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,750	cleaning out
Hilderbrandt, R., No. 1 Crows Landing, Stanislaus Co.	36- 6- 7	1,120	suspended
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23- 3	3,040	suspended
Union Oil Co., No. 1 Tracy, San Joaquin Co.	14- 3- 6	4,418	bl. sh. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	7,414	suspended
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Westwood Oil Co., No. 2 Hermosa, Los Angeles Co.	6- 4-14	2,151	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	2,700	suspended
Lawndale Pioneers, Inc., No. 1 Peck, Los Angeles Co.	20- 3-14	5,970	testing
Mohawk Pet., No. 1 El Nido, Los Angeles Co.	29- 3-14	5,500	sd. sh. drilling
Ranger Pet. Co., No. 1 Watson, Los Angeles Co.	23- 4-13	3,785	pump 15 B/D
Avalon Park Dev. Co., No. 1 Watson, Los Angeles Co.	17- 3-13	rig	suspended
Pedro Pet. Corp., No. 1 San Pedro, Los Angeles Co.	14- 5-14	rig	suspended
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11- 2-15	2,700	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27- 2-10	2,200	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	2,250	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	1,370	suspended
Jones, W. L., No. 1 Bell, Los Angeles Co.	31- 2-12	718	sd. sh. drilling
Weist Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	4,902	suspended
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	4- 2-11	5,060	test W.S.O.
Wardell & Menichini, No. 1 Montebello, Los Angeles Co.	7- 2-11	rig	rigged up
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,919	suspended
Yellowstone Oil Co., No. 2 Alhambra, Los Angeles Co.	19- 1-12	2,015	suspended
Davidson Oil Co., No. 1 Monterey Park, Los Angeles Co.	32- 1-12	....	location
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26- 1-17	1,004	suspended
Caballero Estates, No. 1 Calabasas, Los Angeles Co.	23- 1-16	1,460	suspended
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6- 2-16	1,395	suspended
Ajax Pet., No. 1 Newport, Orange Co.	21- 6-10	6,944	gr. sd. drilling
Beck, Alfred, No. 1 Corona, Riverside Co.	8- 4- 6	1,110	suspended
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,532	sd. sh. drilling
Duncan, N. L., No. 1 Sagebrush, Riverside Co.	8- 4- 6	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	suspended
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	635	sd. sh. drilling
Woods, D. H., No. 1 Salton Sea, Imperial Co.	7-11-16	670	sd. sh. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 2 Encinitas, San Diego Co.	12-13- 4	1,890	sd. sh. drilling
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	1,243	suspended
Itasco Pet. Co., No. 1 Mesa, San Diego Co.	33-18- 1	1,700	cemented
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 6- 8	5,250	suspended
Oklahoma Oil Corp., No. 1 Palms, San Diego Co.	25-11- 8	1,128	sd. sh. drilling

Western Indiana Is Getting Fair Wells

Gibson, Pike and Other Counties Making Better Showing. Good Producer in Owensboro Field, Kentucky. Central West Hit by Waters

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Feb. 15.—None of the divisions of the Central West Field showed any activity outside of the Central Ohio area and completions were scarce in that active field. This slackening of field work was due to a large extent to the high waters that prevailed in all fields east of the Mississippi River, even Kentucky with its shallow fields like Hart County showing no activity to speak of as the big rivers and streams that pass through the oil-producing areas prohibit the moving of drilling machines, especially in the lowlands, which appear to be the choice spots for operations.

In the old Lima Field of northwestern Ohio but one completion was reported, R. W. Kurtz and others' No. 1 Etta Smith farm, Section 11, Ridge Township, Wyandot County, a very light gas well in the Trenton lime from 1,388 to 1,408 feet.

The test of Ennis Brothers and others on the William Harpst farm, Lot 4,478, Jefferson Township, Logan County, does not look as though it would make a commercial producer at a total depth of 1,900 feet. This well had a slight showing of oil from 1,771-95 feet.

Murphy and others' No. 1 C. S. Grubel farm, Section 7, Crawford Township, Wyandot County, found an oil showing at 1,466-68 feet, but it does not indicate a commercial producer.

The Sandusky Gas Co., operating a large territory for shallow gas just north of Tiffin, in Seneca County, where the company has a total of 16 gas wells, at its annual meeting elected Frank Cook of Toledo president; N. C. Miller of Elmore, Ohio, vice president and general manager; Edward Cook, Toledo, secretary, and M. L. Leister, of Tiffin, treasurer. The directors chosen were Frank D. Cook, Toledo; N. C. Miller, Elmore, Ohio; Mayor John Dreitzler, John Miller, M. L. Leister, and H. Z. Hakes of Tiffin.

CENTRAL OHIO

Six completions were the result of drilling in the Central Ohio Field, of which two were producers with an initial production of 75 bbls., one dry hole and three gas wells. Quite a few are nearing the depth to find either gas or oil.

In Ashland County, the Commonwealth Gas Corp. found a dry hole on the William Shearer farm, Section 11, Montgomery Township. Same company is drilling No. 1 Oratta Bennett farm, Section 31, Jackson Township. Eddy and others are shut down at their No. 4 Edward Gardner farm, Section 17, Perry Township. Harmon & George are starting No. 6 on the David Horn farm, Section 4, Lake Township, and Hulse-Kundtz, Inc., are starting No. 1 Clarence Framfelder, in Montgomery Township, in Section 10.

In Lorain County, Avon Township, McMillan and others are drilling No. 1 H. and C. Norton farm, Section 15. Ramage & Willis are drilling No. 2 Fred Armbruster farm, Lot 72, Grafton Township.

In Medina County, Edson Sons Co.'s No. 35 Narcus A. Frank farm, Lot 20, Chatham Township, is reported with an initial of 25 bbls. from 405 to 493 feet. No. 36, same farm, is drilling, as well as No. 21 on the Daniel Ross farm, Lot 27, same township, for the same company. McMill and others are starting No. 1 Luke W. Battle farm, Section 3, York Township.

In Holmes County, Washington Township, Wiles and others' well at last report was at 550 feet on the Christian Sprang farm, Section 27, which is the Berea formation.

In Richland County the Commonwealth Gas Corp. is starting a test on the Angeline Cates farm, Section 11, Jefferson Township.

In Coshocton County, Newcastle Township, the Preston Oil Co.'s No. 1-1,493 on the A. J. and B. W. Beatty farm, in the Third quarter of the township, is credited with an initial of 50 bbls. from the Clinton lime formation at 3,096-3,156 feet. Same company is starting No. 2-1,511 John R. Rine farm, Section 16, Perry Township, same county.

In Summitt County Wiser Oil Co. made a location on the O. C. Conlon farm, Lot 84, Bath Township. Smith and others are drilling on the Charles A. Smith farm, Section 19, Gree Township, and Arthur Reeves is drilling No. 1 N. Kandle farm, Section 36, same township. Barnhart and others are shut down on the M. G. and C. O. Owsborn farm, Section 2, Richfield Township, same county.

In Licking County, Fallsburg Township, the Emerald Petroleum Co. is drilling No. 1 Sidney Tarlton farm, Section 9, and No. 1 Thomas Moren farm, Section 13, same township. Wehrle Gas Co. is drilling No. 4 Fred W. Hobart heirs farm, Lots 5 and 6, Granville Township.

In Muskingum County, Brush Creek Township, the Pure Oil Co. made a location for a second test on the M. W. Scott and M. P. Hammond farm, Section 3, same township. William Cline and others are drilling on the Howard L. Doyle farm, Section 3, Clay Township.

In Athens County, Clyde Cody is drilling No. 4 Charles Ackley farm, in Fractional Section 6, Carthage Township.

In Stark County, Jackson Township, the Ohio Fuel Gas Co. has a gas well in No. 1-5,596 L. C. Buchtel farm, Section 15, also a gas well in No. 1-5,594 William J. Hitz farm, Section 16, same township. William Pfeiffer made a nice gas strike on the Eli Snyder farm, Section 11, same township.

In Guernsey County, Jackson Township, W. C. Urban and others are drilling No. 3 on the Guernsey Valley Fair Grounds, Lot 22.

INDIANA

The western portion of Indiana is making a much better showing than for a number of years in the bringing in of very fair oil and gas producers in Gibson, Pike and other countries. Another excellent producer has been found by the Gib Van Oil Co. in No. 3 on the Agnes Haskins farm, SE Section 18, Washington Township, Gibson County, which showed an initial of 105 bbls., and No. 4 same farm, is under way. The Indiana Southwestern Gas Corp. is drilling a second test on the G. B. Allen farm, Section 22, Columbia Township, same county. Knox Engineering Corp. is drilling on the Charles C. Steele farm, NE NE Section 22, same township.

Harry N. Bell and others' No. 3 Craig heirs farm, NE Section 20, Washington Township, Pike County, shows a gas volume of 1,000,000 feet from 1,103-17 feet. P. C. Andrews is drilling No. 10 Loveless farm, Section 23, Logan Township, and in the Oatsville Pool.

In Warrick County, Greer Township, the Elberfield Gas & Oil Co.'s test on the Henry Menke farm, NW Section 28, Greer Township, got an oil showing at 1,686 feet, but is being drilled deeper and at last report the drill was down to 1,776 feet.

In Perry County, in southern Indiana, H. C. Darby and others' test on the U. B. Cummings farm, NE Section 8, Tobin Township, was dry in the Corniferous formation. Bolyard and others are drilling No. 1 Margaret Taylor farm, SW Section 19, Anderson Township, same county.

In Knox County, James H. Gardner's

(Continued on Page 61)

Open Winter Retards Eastern Work

Almost Impassable Roads in Outlying Districts and Curtailment Reduce Number of Completions During Week

By Staff Correspondent

PITTSBURGH, Pa., Feb. 15.—In the three divisions of the lower Eastern fields, only eight new wells were completed, and, together with the report of one dry hole, it represents the poorest week in recent years. The open winter, with its almost impassable roads in outlying districts, has contributed to the present retarding of operations but the chief cause is an economic one. With the 25 per cent curtailment of production in force, and the minimum of industrial and domestic gas being consumed, except where necessary, larger operators have halted drilling programs.

In line with the curtailment in southwest Pennsylvania, West Virginia and Southeast Ohio, production in the upper country, the Bradford and Allegheny districts, is also being held at 75 per cent of normal with some refinery interests asking for an additional 5 per cent decrease in production. With the million-barrel reduction in production in 1931 compared with 1930 figures, and the present balancing of consumption and production, very little Pennsylvania grade crude has been added to stocks.

SOUTHEAST OHIO

One 20-bbl. well, two gas wells and one dry hole constituted the week's work in Southeast Ohio. The producer was the result of the second test of the Hopewell Fuel & Gas Co. on the Scallon heirs farm in the NW of Section 14, Reading Township, Perry County. It was drilled in the Clinton sand at a depth of 3,170 feet and after shot produced 20 bbls. the first day.

In Athens County, near New Marshfield, in Section 16, Waterloo Township, the Standard Natural Gas Co. completed a test on the James Boden farm. It went in the grit at 1,158 feet and is showing for about 300,000 feet of gas a day. In Hocking County the Griffin Producing Co. completed a second well on the Clara J. Park farm in the SE of Section 30, Green Township. It is a gas well from the Clinton sand at a depth of 2,841 feet and is rated good for 250,000 feet a day. The Clinton sand was found to be 31 feet thick and uniformly good.

E. R. Edson & Son Co. drilled No. 32 on the productive George W. Packard No. 1 lease, Lot 4, Section 13, Chatham Township, Medina County, the present scene of many shallow sand wells. The hole was drilled to a depth of 440 feet and proved dry with a faulted sand.

Drilling in Ohio

In Noble County, Metcalf and Robinson are drilling a second test on the Fred Springer farm in Section 28, Elk Township. In Enoch Township, the Harper Brothers are drilling on the D. Morland farm in Section 31. In Jefferson County, Sanders Brothers are shut down at present in the test on the Virginia Crowford farm in Section 20, Island Creek Township.

In Carroll County, Eaton and others have No. 8 on the Nelson E. Slates farm, Section 8, Louden Township, drilling at 1,100 feet, and also No. 4 drilling on the Jennie Chase farm in Section 4. In the same township, George W. Elliott and others are drilling No. 3 on the H. G. Buchanan farm in Section 3. In Center Township, the Lisbon Oil & Gas Co. and others have No. 4 drilling on the James M. Hanna farm in Section 4.

In other parts of the field there is very little activity at present.

WEST VIRGINIA

Two small oil producers and two gas wells were completed in West Virginia. It is almost an incredibly small total for this extensive district but some work has been held up by impassable roads. In Marion County, Snider and Pense completed their No. 3 on the Joseph T. Satterfield farm in Mannington district. It is rated as a 5-bbl. a day producer from the Injun sand at a depth of 2,405 feet. In Hancock County the R. J. Braden Co. completed and cleaned out its test on the Robert Johnson farm in Grant district. It started off as a 2-bbl. pumper.

Gas Wells

In Cabell County, R. H. Adkins and others completed their test on the B. S. Perry farm in McComas district. It was drilled in the shale at a depth of 3,690 feet and is showing for a small gas well. In Calhoun County, Lyle Ayers and others completed their test on the M. L. Sturms farm in Center district in the Injun sand at a depth of 1,948 feet. It will make a small gas well.

The Chartiers Oil Co. test on the Freeland Thompson farm on Patrick Creek, Butler district, Wayne County, reported two weeks ago, as showing for 1,000,000 feet a day from the Corniferous lime at a depth of 3,769 feet, is now showing even better. From a recent gauge it is now rated at 1,500,000 feet a day.

Drilling in West Virginia

In Lincoln County there is still considerable activity. In Sheridan district, H. H. Dial has reached 1,070 feet on the Claude Peyton farm. In the same district the Kanawha Gas & Utilities Co. is testing the sand and cleaning out after shot in their test on the Nona Johnson farm after reaching a depth of 2,057 feet. In Union district the Hamlin Natural Gas Co. is drilling on the Roy and Hal Adkins farm and has reached 1,600 feet. In the same district

(Continued on Page 61)

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

VOLATILITY TEST FOR LUBRICATING OIL

Will you please advise us where we may obtain proper equipment for taking volatility tests at 760° F. on lubricating oils, also furnish us with the method of procedure?—W. C. L.

The volatility test as applied to lubricating oils has for its object the determination of the percentage distilled at 760° F., which indicates the degree to which the original stock has been reduced and freed from the lighter, or low viscosity, portions of the lubricating fraction from the crude oil.

In some respects the details of the apparatus and the method are similar to the A.S.T.M. distillation test for the inspection of gasoline and kerosene, but there are extensive modifications. The important apparatus details include an Engler 250 cc. distillation flask; a transite shield, with a cover, for conserving heat; the elongated type of centrifuge tube as suggested for determining sediment; an electric heater with a capacity at least 1,000 watts; and the condenser is the same as used for the gasoline distillation test. The centrifuge tube is used for measuring the distillate.

The method includes these details: Measure 150 cc. in a 200 cc. cylinder, (allowing about 10 cc. for drainage), and transfer to the flask. Drain light oils for 5 minutes and heavy oils 10 minutes. The thermometer inserted through a cork is fitted into the flask so that the bulb is one-half inch from the bottom of the flask. The interior of the shield box is brought to 600° F. before the flask is placed on the heater. The charged flask is set up on the heater and a tight connection made to the condenser. The dry centrifuge tube is placed at the condenser outlet so that the condenser tube will extend into the centrifuge tube at least 1 inch. Heat is applied at a rate to bring over the first drop within 10 to 20 minutes, recorded as the initial point, and then continued at a uniform rate of 9° to 11° F. rise per minute. Record the observations of the quantity collected in the receiving graduate at every 10° rise. Continue distillation until the thermometer indicates 760° F., shut off the current, remove the lid from the shield and let the condenser drain before making the final record of the volume collected. The total volume of the distillate is calculated to per cent and noted as distillate recovered.

The test is intended to simulate the conditions which exist under the piston head, on the cylinder walls and in the main crank bearings.

The additional information requested is supplied by mail.

VISCOSITY INDEX OF LUBRICATING OILS

We have run across the expression "viscosity index" several times recently and would greatly appreciate a definition of it. It is our understanding that viscosity index is a measure of the effect of heat upon an oil in so far as its viscosity is concerned. We are particularly desirous of getting at the mathematics of the subject provided it is based upon a definite underlying theory.—C. H. B.

Viscosity index is a coefficient developed by Dean and Davis, originally published in Chem. Met. Eng., Vol. 36, 618, 1929, as a simple function of Saybolt Universal Viscosities of an oil at 100° and 210° F. This coefficient is approximately constant for all lubricating fractions that may be separated from an oil of definite origin. These investigators after testing numerous lubricating oils found that there were extreme types, one of which showed a small change of viscosity with temperature and these were designated Series H Oils; another type having large differences was classified as Series L Oils.

The general relationship of the viscosities at 100° F. and 210° F. being expressed by:

$Y = a + bx + cx^2$ in which Y = viscosity at 100° and x = viscosity at 210°. The constants a, b, and c, characteristics of the series were calculated for each series by the method of least squares. The equations are:

Series H $Y = 0.0408x^2 + 12.568x - 475.4$.

Series L $Y = 0.216x^2 + 12.07x - 721.2$.

From these equations a table was prepared to show the equivalent viscosity of each series of oils for every viscosity at 210° from 40 to 160. The following has been extracted from this table:

Viscosity Data at 100° of H and L Oils for Viscosities at 210° F.

Sample at 210°	Viscosity at 100° F. H	L
40	93	107
50	255	422
60	426	781
70	604	1,182
80	791	1,627
90	986	2,115
100	1,189	2,646

Viscosity index may be calculated from

$$V.I. = \frac{L - U}{L - H} \times 100,$$

here U is the viscosity at 100° of the sample; L and H respectively the viscosity at 100° of the Series L and Series H oils having the viscosity at 210° identical with that of the sample.

The method for calculated the viscosity index is illustrated by an oil having a viscosity of 60 at 210° and 600 at 100°. This has a viscosity index of 51.

$$V.I. = \frac{781 - 600}{781 - 426} \times 100 = 51$$

DETERMINING CRANKCASE DILUTION, SLIGH AND A.S.T.M. METHODS

We wish to obtain information relative to the origin and instructions for procedure in the use of the Sligh method of testing crankcase oil for dilution. This method was diagramed and described at length in The Oil and Gas Journal during 1925 or 1926.—C. H. S.

The Sligh method for the determination of crankcase dilution was discussed in The Oil and Gas Journal, October 7, 1926, page 358. The following is a brief outline: Measure 100 c.c. of the oil into a 250 c.c. distilling flask, the vapor tube of which is bent down to fit into an upright condenser, and place a column of steel wool in the neck of the flask. Close the flask with a good cork. Connect to a good condenser and set a capillary in a graduate below the outlet to receive the distillate. Heat rapidly at first until the overpoint, then adjust the temperature to maintain a head of about one-half inch on the capillary funnel. A rapid increase in the head at the transition between diluent and oil is taken as the end of the distillation. The number of c.c. in the graduate is the percentage of dilution.

The American Society for Testing Materials method for determining dilution of motor oils is an improved method retaining the essential principles of the Sligh method. It is designated D 322-30 T in the A.S.T.M. publications. The apparatus consists of a distilling flask with a reflux condenser discharging into a trap for collecting the distillate. The trap serves to collect and measure the diluent while returning condensed water to the flask.

A 25 c.c. sample is placed in the flask with 500 c.c. of water and the apparatus assembled after filling the trap with water. The water is brought to the boiling point within 7 to 10 minutes. The quantity of diluent is noted 5, 15 and 30 minutes after the reflux starts and then each 15 minutes following until the test is completed. The test is complete when no more than 0.1 c.c. collects in any 15-minute period. The percentage dilution is obtained, after cooling 15 minutes, by mulitplying the final volume by 4.

EQUIVALENT GRADES NATURAL GASOLINE

We have been settling our natural gas royalties under a formula which involves the use of the quotations from The Oil and Gas Journal on Grade AA natural gasoline. Since the first of January, the old quotations have been discontinued and it is now necessary to present a figure showing the average price for the month of the natural gasoline in North Texas corresponding most closely to the former type known as Grade AA. What would be the equivalent grade according to the new specifications?—W. G.

The grade of natural gasoline known as Double A or AA was one having a gravity 80 to 87.9 A.P.I., endpoint not over 375° F., and recovery on distillation not less than 90 per cent. Additional specifications, the same for all grades, included—Color not under +25 Saybolt, doctor test negative (sweet), and negative copper strip test.

The Natural Gasoline Association of America has adopted specifications for natural gasoline, effective January 1, in which 24 grades are recognized for this product. Since these are classified on the basis of vapor pressure and percentage evaporated, A.S.T.M. distillation, it is not clear just which one of these grades is comparable with the former AA grade; however, the general practice in the trade is to accept the 26-70 grade of the new specifications as the equivalent and to further specify in contracts such data as have been established through experience when handling the product from the same source.

An agreement, which would probably be satisfactory to both seller and purchaser, may include—Gravity 80/87.9 A. P.I., distillation recovery at 140° F. between 70 and 85 per cent, endpoint not over 375° F., distillation loss between 4 and 10 per cent.

Certain characteristics are considered by the refiner, the largest consumer of natural gasoline, as desirable. Attention is especially directed to high gravity and low distillation loss, because these are factors of importance when blending for a motor fuel. In addition to meeting the specification of the customer or an inspecting agency, a high gravity and well stabilized, natural gasoline will be economical when blending for a desired gravity and also will prove satisfactory from the standpoint of possible vapor lock tendencies.

The present price table, Refinery and Crude Prices, in The Oil and Gas Journal, mentions under natural gasoline Grade 26-70. This is intended to be equivalent to the former AA grade. The additional grades quoted, 18-55 and 30-70, represent natural gasolines corresponding to Grade A and Grade BB respectively of the former system.

CONTROL OF GASOLINE TREATERS

What is the name of the chemical used to ascertain when the stock being treated in continuous gasoline treaters has received the proper caustic and doctor treatment? An article was published in The Oil and Gas Journal in 1929 describing this chemical. It was a laboratory test.—I. B. C.

The common methods for control of the refinery process for the purification of gasoline, by the doctor treatment, are the doctor test and the copper strip corrosion test. These have been described many times and may be found in U. S. Bureau of Mines, Technical Paper 323B.

The special test to which reference has been made may have been the mercury test, described in Bureau of Mines Report of Investigations, No. 2,862, was developed by G. T. Granger and A. B. Comstock. This test is made with 100 c.c. of a sample withdrawn from the treater and placed in a clean 4-ounce bottle with about 1 c.c. of mercury. This is violently shaken for two minutes, then poured on to an 8-inch white filtered paper. The paper is then dried by the aid of a blast of air or spread out and permitted to dry by evaporation.

The intensity of the black coloration or precipitate is a measure of the corrosive nature of the gasoline. A clean paper, or one that is only slightly discolored, indicates that the product will pass the copper strip test. If there is a heavy black precipitate on the paper and the sample also gives a negative test with the doctor test, it means that an excess of sulphur over the quantity required to complete the reaction, for removal of hydrogen sulphide and the mercaptan conversion to the disulphide, has been introduced during the treatment and that the gasoline will be corrosive.

It is advisable to make the mercury test in conjunction with the copper strip test until the operator has learned how to interpret the black coloration on the paper. The copper strip test may be modified by heating the gasoline in the presence of the strip in boiling water or steam, and in this way accelerate any action, so that an indication may be obtained within a few minutes.

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Personal Paragraphs About Oil Men

Francis P. Haynes, oil operator, has opened offices in San Antonio, Tex.

* * *

Ernest S. Robson, representing the Ludlow-Saylor Wire Company, St. Louis, was in Tulsa during the week.

* * *

J. A. Warren, secretary of the Kinney-Coastal Oil Company, has returned to Denver, Colo., from a trip to Texas.

* * *

Newton Chapin, chairman of the board of directors, Lee C. Moore Company, Pittsburgh, Pa., was in Tulsa last week.

* * *

Harry Randall of Fort Worth, Tex., has been looking the Laredo, Tex., territory over and is now back in Fort Worth.

* * *

E. R. Black of Okmulgee, Okla., is in Laredo, Tex., where he has been staying for some time while scouting over the country.

* * *

Sidney H. Keoughan, of Denver, Colo., is in New York in connection with plans for developing the Midway Dome in Wyoming.

* * *

John P. Cusack, head of the land department of Skelly Oil Company in Kansas, has been called to Canton, Ohio, by the serious illness of his mother.

* * *

Frank M. Drane of the Drane Tank Company, who has spent considerable time in the East Texas fields for the past year, is spending a week or ten days in Tulsa.

* * *

Sidney Powers, of the Amerada Petroleum Corporation, spent several days recently in Southwest Texas territory, and at the company's office in San Antonio.

* * *

Morgan F. Larson, former governor of New Jersey, and president of the Larco Gas & Petroleum Company, is at San Antonio, Tex., directing that firm's development work in Southwest Texas.

* * *

J. M. McIntire, vice president and general manager of the New York Oil Company and of the North Central Gas Company with offices in Casper, Wyo., spent a short time in Denver, Colo., on business.

* * *

Carleton J. Anderson, of Tulsa, special representative of A. Leschen & Sons Rope Company, St. Louis, Mo., has been appointed to succeed John K. Gordon, who is no longer connected with that company.

* * *

Dave Boylan, director and manager of the Mid-Continent division of the General Paint Corporation, is en route to San Francisco, Calif., to attend the annual stockholders and directors meeting to be gone about 10 days.

* * *

H. A. Steele, of Lawton, Okla., zone agent in the southwestern Oklahoma area for the Prairie Oil & Gas Company, is temporarily assigned to the western Kansas district. J. F. Kuhn, of Ardmore, Okla., zone agent for southern Oklahoma, is doubling while Mr. Steele is away.

* * *

J. S. Dewar, vice president of the Phillips Petroleum Corporation in charge of production, has announced his resignation, effective March 1. Mr. Dewar, second oldest employe of the company in point of service, started work for Phillips in 1917 as an accountant. He plans to enter business for himself.

* * *

A group of representatives of the Continental Oil Company, from Texas, New Mexico and Louisiana, held a special sales meeting in Fort Worth, Tex., during the past week, among those from Ponca City attending the meeting being Hatcher E. Scott, advertising department; Frank Moore, special representative; R. E. Simmons, accounting department; and C. R. Tracy, of the engineering department.

Paul Williams of Oklahoma City has lately been a visitor to the Laredo territory in Texas.

* * *

L. B. Stanley, representing the Durabla Manufacturing Company, Dallas, Tex., was a Tulsa visitor last week.

* * *

E. P. Halliburton, of Duncan, Okla., and J. C. Halliburton of Oklahoma City, are in East Texas on business.

* * *

William Patterson, president of the Frick-Reid Supply Corporation, and J. L. Shakeley, vice president, are in California on a business trip.

* * *

Colin C. Rae, Skelly Oil Company, Tulsa, is the delegate for the Mid-Continent section at the annual meeting of the American Institute of Mining and Metallurgical Engineers, in New York City.

Men of the Industry

O. H. Simonds

O. H. Simonds, for the last eight years associated with the Electric Bond & Share Company as operating sponsor of certain of its gas and electric properties in the Mississippi Valley, including United Gas Corporation, has been elected president of the Appalachian Gas Corporation, succeeding H. G. Scott, who remains as a director.

The Appalachian Gas Corporation's new president was born in Duluth, Minn., and was graduated from Cornell University with the degree of M. E. Until 1915 he was with General Electric Company in Schenectady, N. Y., and Chicago. He then became general manager of the Vicksburg, Miss., Light & Traction Company, and later vice president and general manager of Dubuque, Iowa, Electric Company. He has specialized in the operations of gas and electric properties for over 15 years. He has been on the board of the Memphis Natural Gas Company since its organization, and is also director of Louisiana and Arkansas Railroad.

During his association with the Electric Bond & Share Company, in addition to the United Gas Corporation, Mr. Simonds sponsored the operations of such utilities as Louisiana Power & Light Company and Mississippi Power & Light Company. When in Iowa Mr. Simonds was active in the affairs of the National Electric Light Association and was first president of the Middle West division of the association.

Max W. Ball, consulting geologist, of Denver, Colo., is in Fort Worth, Tex., on business.

* * *

W. S. Pattison, of the Arrowhead Iron Works, Kansas City, Mo., was a business visitor in Tulsa last week.

* * *

L. J. Zoller, of the Central Commercial Oil Company, of Tulsa, is spending considerable time in East Texas.

* * *

W. W. Zingery of Fort Worth, Tex., has lately been down to Southwest Texas scouting around, his second visit since Christmas.

* * *

Dr. Victor Henny, European representative of the Universal Oil Products Company, Chicago, has left London for the United States.

* * *

L. D. Cravens, national account salesman of the Goodyear Tire & Rubber Company, Akron, Ohio, called on fleet owners in Tulsa and vicinity.

* * *

C. C. Miers, production superintendent of the Republic Production Company, Wink, Tex., is spending a week at his home in Texarkana, Tex.

* * *

Ed Nolan, assistant purchasing agent of the Carter Oil Company, who had a long period of convalescence following a surgical operation, is back at his desk.

* * *

John M. Crawford, president, the Parkersburg Rig & Reel Company, Parkersburg, W. Va., is making a tour of Mid-Continent fields and was in Tulsa last week.

* * *

H. E. Zoller, of the Shell Petroleum Corporation, formerly located at Kilgore, Tex., has been sent to Holland to do several months' exploration work for the company.

* * *

J. E. Rouse, manager of the Rocky Mountain division of the Standard Oil Company of Indiana, Casper, Wyo., was in Denver, Colo., on a business visit for a short time.

* * *

Ira H. Crame, paleontologist and assistant geologist of the southern division of Pure Oil Company, has been made chief divisional geologist, succeeding A. A. Langworthy, resigned.

* * *

Harry Clinton Abell of New Orleans, La., has been endorsed by the American Gas Association for reelection to the directorate, Chamber of Commerce of the United States of America, to represent the Natural Resources Production Department.

* * *

Maurice Cheek, investigator of the Texas attorney general's department, is ill of influenza at Dallas, where he was stricken while he was on his way to Austin after a trip to Springfield, Ill., to investigate rate charges of exporters of Panhandle natural gas.

* * *

Dean E. Winchester, consulting geologist with offices in Denver, Colo., is to make a survey of oil and gas resources in the Hobbs Field, southeastern New Mexico. Mr. Winchester recently completed a similar survey of the Socorro region, and will do others in southern New Mexico fields.

* * *

Professor Jung, of the University of Strasbourg, has been appointed by the governor general of French Equatorial Africa, to take charge of the oil exploration work at Pointe-Noire and Fernan-Vaz. As soon as this is completed several wells are to be drilled.

* * *

John S. Cordell, of Boston, Mass., general manager of Cities Service Refining Company, and a former Tulsan, with J. C. Willing, of Cleveland, general manager of Cities Service Oil Company of Ohio, and C. E. Foster of Philadelphia, vice president and general manager of Crew-Levick Company, enjoyed a deer hunt recently in the wilds of the Keystone state.

Natural Gas Industry Developments

REGIONAL SALES COUNCIL IS MEETING AT CHICAGO

CHICAGO, Feb. 15.—Members of Midwest Regional Gas Sales Council of commercial section, American Gas Association, are meeting here tomorrow for their annual conference which closes February 17. Sales policies and plans for 1932, together with recitals of progress of the gas industry in the Midwest are featured topics. The manufacturers' section of the gas association is holding its regional conference in Chicago February 18 and 19.

Members of the Midwest Regional Gas Sales Council are as follows: F. M. Rosenkrans, chairman, the Gas Service Co., Kansas City; Stanley Jenks, vice chairman, Northern Indiana Public Service Co., Hammond; E. J. Boyer, Minneapolis Gas Light Co.; A. F. Davey, Wisconsin Public Service Corp., Sheboygan; Howard Davis, Commonwealth & Southern Corp., Jackson, Mich.; W. R. Evans, the Peoples Gas Light & Coke Co., Chicago; D. H. Frazier, Jr., Battle Creek Gas Co., Battle Creek; R. O. Jasperson, Milwaukee Gas Light Co., Milwaukee; W. L. Jones, St. Louis County Gas Co., Webster Grove, Mo.; G. C. Klopf, William A. Baehr organization, Chicago; C. A. Luther, Peoples Gas Light & Coke Corp.; W. F. Miller, Public Service Co. of Northern Illinois, Chicago; C. A. Nash, United Light & Power Co., Davenport, Iowa; C. V. Sorenson, Indiana Electric Corp., Indianapolis; Ira Steele, Des Moines Gas Co.; R. J. Vandagriff, the Laclede Gas Light Co., St. Louis; Paul Young, Central Public Service Corp., Chicago.

ALBERTA'S WASTE GAS PROBLEM

CHATHAM, Ontario, Feb. 12.—Alberta's waste gas problem was reviewed at the annual conference of the associate gas committee of the National Research Council held at Edmonton. At the conclusion of the conference Dr. H. M. Tory, head of the council, said no statement would be issued as further consideration was necessary. Suggestions and experiments relating to possible economical utilization of Alberta's waste gas were reviewed.

CUT BANK DELIVERIES

DENVER, Colo., Feb. 13.—The Cut Bank, Montana, gas field is reported delivering 18,000,000 feet of gas per day to the Montana Power Co.'s pipe line to Butte and Anaconda. When the smelter at Helena is cut in, this will be increased by 2,000,000 feet. Total deliveries will be approximately 10 per cent of the developed capacity of the field. A number of wells are scheduled to be drilled the coming spring.

BUYS SHINGLEHOUSE WELL

SHINGLEHOUSE, Pa., Feb. 15.—The Allegany Gas Co. has obtained the 8,000,000-foot Hebron gas well of Robert Hungiville and others of Rexford, together with all acreage held by the Hungiville group. John Crippen, right of way man, of Port Allegany, has been here securing right of way for line to the Allegany company's 8-inch line.

NEW PENNSYLVANIA GAS CORP.

WELLSBORO, Pa., Feb. 13.—The Antrim Oil & Gas Corp. has been organized and incorporated, with a capital of $5,000, to develop natural gas and oil properties in the Tioga Field of northern Pennsylvania. Headquarters of the new concern, headed by Robert W. Lewis, Jr., have been established in Antrim, Pa.

CALIFORNIA GAS CONSERVATION AIDED BY SEVERAL FACTORS

By Fred G. Stevenot
Member of State Railroad Commission, California*

The blowing of natural gas into the air in any considerable quantities has practically ceased in California. Many things have combined to bring this about. Probably the greatest contribution has been through voluntary agreements restricting and controlling oil production. A decrease in drilling and an effective enforcement of the state gas conservation law has played a large part and incidentally, a depressed market for oil has exercised an influence in the campaign waged to eliminate waste.

There still exist a few fields where the waste of gas is greater than necessary. When these are corrected there still remains the problem of preventing the waste of gas in times of low demands during warm weather and of seeing that the amount of gas to the barrel of oil produced is kept at a proper ratio.

The improper handling of an oil-producing area through an unbalanced gas-oil ratio resulting in unnecessary underground reduction of gas energy represents a type of waste almost as serious as that which results from gas blown into the air. In both instances the loss in valuable heat units will eventually become apparent and result in an unfavorable economic situation. One can not escape the results of what might be termed the "natural sequence of things," for the penalties invited by folly are inevitably swift and sure. Inattention and unsound practices are visited by the same results, though slower in arriving, yet nevertheless are just as sure.

Effect on Oil

As a production matter, oil and gas being inseparable in their relationship, it becomes practically impossible to consider either independently. Their intimate relationship is such that to affect one is but to invite a corresponding influence upon the other.

And one must also keep in mind that in California natural gas is subject to influences resulting from national and foreign production of oil, in that a considerably increased domestic production of oil must necessarily cause a greater volume of gas to be released from its natural placement and by the same rule a lesser production of oil brings about a reduction in the volume of gas brought to the surface. In the first instance we have waste, if production increases to a point beyond current needs, and in the other the question of meeting requirements is highly important.

Probably no such basic matter as our petroleum resources has been so left to chance. It is true that the science of discovery and location of oil pools has progressed to an astounding point and the mechanics of exploration has followed in a highly satisfactory manner, but from here on an entirely different picture is presented. Happily the situation is changing for the better and to the point wherein natural gas with all its admirable qualities is coming into its own and receiving the attention it deserves.

Value to State

Those engaged in the oil-producing business recognize the important part it plays in the production of oil. The State also appreciates the value of its natural gas resources and is particularly concerned as to its waste. In this State authorities have diligently pursued a well-directed course in an effort to reduce wastage in any form or guise to a minimum. Hence a recurrence of many objectionable features formerly existing in the production end of the industry might reasonably be expected to never occur again.

At this point it might be well to say just a word as to the value of natural gas. Its heating qualities and convenience in handling has been recognized for many years, yet, like many useful innovations, it has required considerable pioneering, and particularly on the part of the public utilities, before it became generally acceptable to the public.

The possible lack of dependability as to the supply of gas, the remoteness of the several oil and gas fields from commercial centers and the initial cost of distribution, as well as questions involving reconversion of facilities for its use in general industry, have hindered its general acceptance to some extent. However, at the present writing, California is rapidly being placed upon a natural gas basis.

Its growing importance will become more evident in the immediate future, hence, should it fail to sustain the burden that is being placed upon it, the failure will become far more apparent to all than are the benefits which it contributes to the general welfare of the State at the present time.

Onus of Failure

In the light of our present knowledge, it appears that a failure can only occur through gross or careless inattention to the needs of the industry.

While it is true that in the past a large volume of gas was blown into the air and thus forever lost, yet from our present knowledge one might reasonably conclude that if handled properly, our present estimated supply of natural gas yet remaining in the ground is sufficient to carry California through the present industrial cycle which basically rests upon our petroleum resources, following which we must depend upon science and the ingenuity of man to find ways and means to shift the burden to some other agency. This last thought is largely speculative, yet the past is replete with such instances, which justifies the hope that history will repeat itself.

In view of the situation as it now exists, it would seem advisable to subordinate the production of oil to the needs of the natural gas industry, for while trade readjustments can be effected to meet our oil requirements and in turn contribute to the conservation of California's petroleum resources, the natural gas industry does not lend itself to any such arrangement.

State-Wide Control

The serious losses of natural gas will not from now on be found in careless or wanton "blows to the air." Rather will they be found in the uneconomic uses of natural gas such as unbalanced or disproportionate distribution, largely brought about by a lack of central control of the distributing system and attendant uses. Where control is direct, it becomes effective and results in efficient production and distribution practices, and will, if carried a step further, result in proper utilization. It would appear that only through a state-wide control exercised from the source of supply to the consumer can we expect to stabilize the business of distributing natural gas.

A failure to continue to co-rdinate the various factors going to make up the natural gas industry, to the end that California might secure a full measure of benefit from this valuable resource, will in the course of time be listed among the lamentable follies that have occurred so often in our country in the exploitation of our natural resources. Probably no nation in the history of the world has been so recklessly improvident as the American people. It is said that the cruel force of necessity will eventually curb our apparent irresponsibilities. In justice, this thought lends little or no satisfaction, for the penalties, if merited, will unfortunately be visited upon succeeding generations.

*United States Daily.

SERVICE MAINTAINED DESPITE EXPLOSION

CHATHAM, Ontario, Feb. 13.—Despite the fact that Calgary and other cities on the Canadian Western Natural Gas, Light, Heat & Power Co. system draw their supply from Turner Valley, the explosion in the Royalite Oil Co. scrubbing plant failed to seriously affect the natural gas service.

The explosion demolished the preheating section of the $750,000 scrubbing plant, but the fire was confined to the one department, with loss around $15,000.

The explosion and subsequent fire occurred in weather between 20 and 30 degrees below zero. The previous day, owing to the extreme cold, gas consumption in Calgary reached a new peak of 60,000,000 feet, and the load when the explosion took place was around 59,000,000 feet. The highest load last winter was 47,739,000 feet.

To meet the emergency, arrangements were immediately made to supply the system with gas from the Burdett and Foremost Fields, while the repressured Bow Island Field was also available. This was temporarily supplemented by unscrubbed gas from the Turner Valley Field. Though there was some decline in pressure while the necessary changes were being made, the service was maintained uninterrupted.

According to a statement by P. D. Mellon, superintendent of the Canadian Western Co., the available supply from Bow Island and Foremost is probably sufficient to take care of all domestic consumers. In 1931 three prospective gas fields were located by the company's geological department; and in the same year a total of 1,500,000,000 feet of gas from Turner Valley was stored in the Bow Island sands. The total amount of gas available through the Royalite scrubbing plant was approximately 65,000,000 feet a day, a supply sufficient to meet the needs of all consumers on the Canadian Western system as well as the Imperial Oil refinery at Calgary and the repressuring operations in Bow Island. The capacity of the pipe lines from Turner Valley to Calgary is 90,000,000 feet a day. In 1931 all the gas used in Calgary came from the Turner Valley Field; and no gas is used from the other fields except in cases of emergency. Of the company's peak load, approximately 80 per cent is for Calgary and the balance for Lethbridge and smaller communities on the system.

GAS TESTS AT CHERRYVALE

CHERRYVALE, Kans., Feb. 15.—Anderson Drilling Co. announced it would drill 20 tests for gas for Fidelity Oil & Gas Co. of Topeka on the Mangan farm, 11 miles northwest of Cherryvale. Work will start at once. The Fidelity company already is marketing gas from wells in that section.

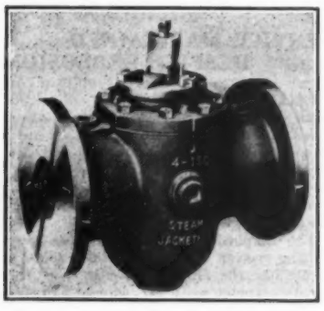
SIX TESTS IN KANSAS CITY

KANSAS CITY, Feb. 15.—A gas well has been brought in near the Kansas City business district and five more are being drilled within the city limits, two of them in an exclusive residential section. Fuel for home or business use is sought. Gas has been found at 300 to 600 feet.

Oil Industry Equipment and Supplies

NORDSTROM INTRODUCES STEAM-JACKETED VALVE

For use in conjunction with steam-jacketed piping, a new series of Nordstrom steam-jacketed valves are offered in semisteel in sizes from 2 to 4-inch, inclusive. These valves are rated at 150 pounds line working pressure and the



jackets are designed for a maximum saturated steam pressure of 100 pounds with maximum temperature 337 degrees Fahrenheit, according to the Merco Nordstrom Valve Co., manufacturer.

The Nordstrom valve embodies a lubricated plug cock, and by use of the steam jacket housing it permits the handling of fluids of highly viscous nature or requiring an elevated temperature for proper transmission. These valves are cast with double walled body, the heating space thus formed entirely surrounding the body. To accommodate the double wall and jacket space and to provide proper clearance for bolting the valve is cast for flanges larger in diameter than normally used. The valve flanges have the standard dimensions of the next larger standard pipe size so that no special drilling templates are required. Special lubricants in stock have been developed by the company for use in valves carrying high temperatures so that the lubricant retains the proper consistency and provides the correct film between the plug and its body.

Specifications of these steam jacketed valves may be had by addressing the manufacturer, 343 Sansome Street, San Francisco, or any of the branch offices.

ONE TUBE AND FITTING MAKE A COMPLETE UNIT

A new series of sectional streamline flow forged-steel return-bend fittings of unit tube type is announced by the Key Boiler Equipment Co., Inc., East St. Louis, Ill. Key unit tube type fittings are so called because one fitting and one tube make a complete unit. The entire heating coil is made up by assembling a multiple number of these units, all of which can be done with a wrench. No other tools are necessary.

U-bends are easily removed for cleaning and inspecting tubes. A single unit (fitting and tube) may be removed from the furnace at any time without damage to it or to the adjacent units. This permits transferring a tube unit to a different position in the furnace when necessary, and it is also important when taking out a tube for repairs in the shop, hydrostatic tests, or for close inspection. Tubes can be turned while in position in the furnace to take care of unequal wear on walls of tubes.

The entire coil may be quickly dismantled without damage to any part of tubes or fittings. The fittings are made for all operating pressures and temperatures, and for every type of tube and pipe still assembly.

AMONG THE EQUIPMENT HOUSES

The Dunbar Engineering Co., representing the Edward Valve & Manufacturing Co., East Chicago, Ind., has removed its New York office from 122 East Forty-second Street to 21 West Street.

H. S. Fredenburgh, for more than 20 years connected with Goulds Pumps, Inc., Seneca Falls, N. Y., has resigned as secretary and comptroller. Seabury S. Gould, second vice president, becomes secretary also and succeeds the late William D. Pomeroy as a director. Hamilton Garnsey, Jr., has been appointed assistant to the president.

C. L. McMullen, formerly of Madison, Wis., has joined the Caterpillar Tractor Co. organization, Peoria, Ill., as manager of engine sales.

J. F. Mehlhope, formerly Chicago district sales manager for the Central Alloy Steel Corp. and later for the Newton Steel Co., has joined the sales force of the Chicago Steel Service Co., warehouse distributors for Toncan iron and Enduro stainless steels, products of Republic Steel Corp. The Chicago company has remodeled and enlarged its offices and warehouse facilities.

The Furnace Construction Co. recently incorporated, has opened operating offices in the Petroleum Tower Building, Dallas, Tex. It specializes in the design and building of radial brick chimneys, still and boiler settings, and other firebrick work. Carey E. Coryea is president, W. A. Vandaveer vice president, and F. B. Pierce secretary and treasurer.

The Foote Brothers Gear & Machine Co., Chicago, has elected Franklin H. Fowler president to succeed James F. Griswold, who resigned. Mr. Fowler is a graduate of the Annapolis Naval Academy and has had a wide business experience, embracing sales, manufacturing, engineering, administration and finance.

B. F. McIntyre is now with the Chicago office of the Lincoln Electric Co., manufacturer of "Linc-Weld" motors and "Stable-Arc" welders, in charge of motor sales for the Chicago district.

W. A. Olen, president and general manager of the Four Wheel Drive Auto Co., Clintonville, Wis., has been elected to the board of directors of the manufacturers' division of the American Road Builders' Association.

Dr. J. G. Davidson, general salesmanager for Carbide & Carbon Chemicals Corp., has been elected vice president of the company. Doctor Davidson has been director of chemical sales for the company since 1923 and was made general salesmanager two years ago. W. F. Reich, Jr., assistant to Doctor Davidson, succeeds him as general manager of sales.

The Vapor Recovery Systems Co., Compton, Calif., has received the Underwriters' Laboratories approval of the "Varec" entrainment separator flame arrestor, "for installation within 15 feet of the open end of a vent pipe" or "between a vacuum and pressure vent valve and an oil tank."

The San Francisco office of the Russell Manufacturing Co., Middletown, Conn., has been moved from 727 Van Ness Avenue to larger quarters at 1157 Post Street.

The Foote Brothers Gear & Machine Co. announces that E. A. Phillips, eastern sales manager, with offices at 225 Broadway, New York, will supervise the Buffalo, N. Y., and Philadelphia offices.

The board of directors of the Westinghouse Electric International Co. elected George H. Bucher vice president and general manager.

James P. Ferguson has been appointed assistant general manager of sales of the Reading-Pratt & Cady Co., Bridgeport, Conn., manufacturer of bronze, iron body and steel valves and asbestos packed cocks.

ARC WELDING ELECTRODE OF NEW TYPE ON MARKET

A new line of arc welding electrodes, which have a heavy all-mineral flux coating, has been placed on the market by the Metal & Thermit Corp., acting as exclusive sales agents for the American Murex Corp., the manufacturer. Both companies have offices at 120 Broadway, New York.

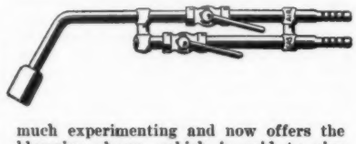
The new electrodes, known as Murex, are made 18 inches long and in types and sizes suitable for a wide range of horizontal, vertical and overhead welding operations.

A feature of the electrode is a patented spiral winding of asbestos yarn which serves to hold the heavy mineral flux to the core so that it is not injured if the electrode is bent. The manufacturers point out that the all-mineral ingredients of the flux on a Murex electrode causes it to burn without objectionable fumes or smoke, while the thickness of the coating enables the operator to ride the electrode on the work, thus letting the flux coating space the arc.

Among the eight types of electrodes in the Murex line there are electrodes for welding commercial mild steel, manganese steel, 18-8 stainless, and stainless iron.

BLOWPIPE DESIGNED TO USE ANY GRADE OF GAS

Numerous localities throughout the United States are changing over from manufactured to natural gas, which means new blowpipes, burners, etc. The Torit Manufacturing Co., 171 West Third Street, St. Paul, Minn., has done

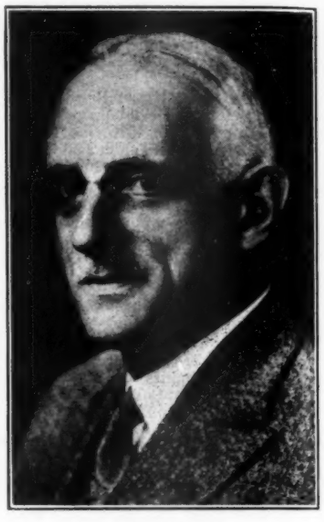


much experimenting and now offers the blowpipe shown, which is said to give good results on any grade of natural gas together with compressed air. This blowpipe is made in various sizes for different kinds of work, such as soldering, light brazing, tempering, melting, rebabbitting, wire splicing, auto radiator repairing, core drying, and for various operations requiring heat, but not for welding.

Torit blowpipes are designed to give the greatest heat possible from the gas used. They are light, well balanced, leakproof and otherwise well built. They will operate on natural gas as well as on coal gas. They use gas and air sparingly.

MEN KNOWN *in* THE EQUIPMENT FIELD

C. E. Wilson, for the past nine years general sales manager of the Worthington Pump & Machinery Corp., Harrison,



C. E. Wilson

N. J., has been appointed vice president in charge of industrial relations.

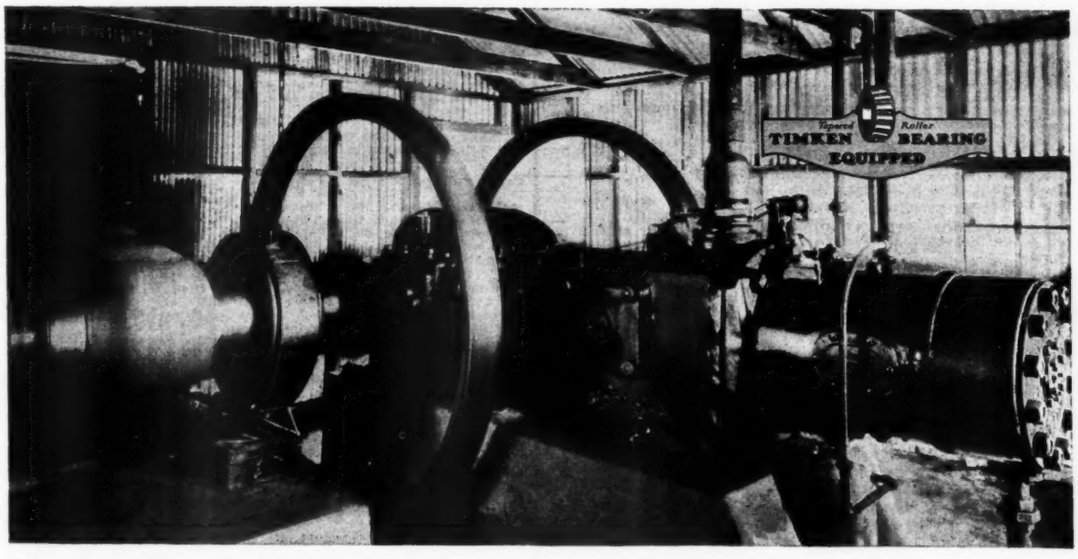
Mr. Wilson began his career with Worthington in 1899 as a salesman in the Chicago office. In 1905 he was appointed sales manager of that office and later was made assistant general sales manager in charge of all territory from Cleveland to Denver. In 1918 he became assistant general sales manager in charge of foreign business where he remained until 1923 when he was made general sales manager.

FRED COOPER'S FIELD WIDENED

Fred E. Cooper, Tulsa, special oil field representative for the Advance Rumely Co., who for years has developed all the oil field equipment for Rumely tractors and had charge of the sales for oil field purposes, has had added to his department the complete line of Allis-Chalmers wheel tractors and all tractor motors, working directly with the engineers at the factory in the developing of winches and oil field equipment. This gives Mr. Cooper the Allis-Chalmers as well as the Rumely line for oil field trade, with the co-operation of all branch houses for repairs and service. The connection was brought about by the recent merger of the Allis-Chalmers Manufacturing Co. and Advance Rumely. Mr. Cooper is credited with originating the winch tractor idea and for years has devoted his entire time exclusively to the study and development of winches for oil field purposes.

LINDEWELD IN PICTURES

The technique of the Lindeweld process and its application in the construction of a 20-inch natural gas line are shown in a motion picture, "New Lindeweld Process for Pipe Line Construction," prepared and distributed by the Linde Air Products Co., 30 East Forty-second Street, New York. Like other Linde motion pictures, this new film is loaned for showing before engineering and technical societies, engineering colleges and other groups.



Another oil field record for Timken Bearings

24 hours a day for 2 years and still going strong

This Cooper-Bessemer 50 H.P. 2-cycle gas engine, equipped with Timken Bearings on the crank shaft, was installed at the Home Gas Company's No. 1 Wallace Well, St. Louis, Oklahoma, in June, 1929, and has given excellent service. In commenting upon this splendid performance, the Cooper-Bessemer Corporation states that the bearings have never needed adjustment. No replacements have been necessary. Before proration was put into effect, the rate of swabbing with this engine was as high as 64 trips in 24 hours, handling 800 barrels of fluid. Following proration the well, which is 4,271 feet deep, was swabbed at the rate of 48 trips every 24 hours. Just another proof of dependability that has made Timken Bearings overwhelmingly dominant in all types of equipment throughout the oil fields.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 40)

LUCAS POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 24 Cartwright, 784 ft. N of No. 4, J. M. Colchado Sur. ..... T.D. 5,327 ft.; comp. making 2,000,000 ft. gas in lime and 60 bbls. gasoline.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Sagarin ..... T.D. 3,100 ft.; drlg.
Gulf Coast Oil Co.'s No. 1 Elder, NW of same company's No. 1 Harrell ..... T.D. 5,070 ft.; standing.
Gulf Coast Oil Co.'s No. 2 Sedwick, east offset to company's No. 1 Harrell ..... T.D. 4,091 ft.; coring.
Gulf Coast Oil Co.'s No. 3 Sedwick, east offset to Houston Oil Co.'s No. 1-B Maggie Harrell ..... Making location.
Houston Oil Co.'s No. 1 McGregor, 150 ft. from E line, 330 ft.; from S line of 100-ac. tract in Sur. 311..... T.D. 504 ft.; set surface csg.
Neal, Milton & Kepley's No. 2 Roark ..... Making location.
Saxet Oil Co.'s No. 3 Donigan, north offset to Zoch's No. 1 Baldwin ..... Location.
Saxet Oil Co.'s No. 5 Well, 3,041 ft. to N line, 333 ft. to W line ..... T.D 2,500 ft
Saxet Oil Co.'s No. 6 Dunn, 600 ft. S of No. 5 Dunn, 4 miles W from Corpus Christi ..... T.D. 4,304 ft.; rigging up to deepen.

ARANSAS POOL—SAN PATRICIO COUNTY

Atlantic Oil Prod. Co., to deepen to 6,000 ft. the Welder Oil Corp.'s No. 3 Welder ..... T.D. 3,889 ft.; to deepen.

LOS OLMOS POOL—STARR COUNTY

Davis et al's No. 1 Kelsey-Bass, 150 ft. from S and E lines of W 10-ac. in SE of NW of Sur. 6, Porcoin 75. T.D. 465 ft.; comp. 20 bbls
Jones & Watt's No. 1 Kelsey-Bass, 200 ft. to N and W lines of Sur. 7, Porcions 75, 76 and 77 ..... T.D. 150 ft.; drlg.
Los Olmos Oil & Gas Co.'s No. 9 Kelsey-Bass, 450 ft. from W line, 150 ft. from N line of SE of SW Sec. 6, Subd. of Porcions 75, 76 and 77, Jurisdiction of Camargo ..... T.D. 435 ft.; drlg.
Quien Sabe Oil & Gas Co.'s No. 2 Kusch, 150 ft. from N line, 525 ft. from E line of Tract 11 in Porcion 75.... Rigging up.
Rio Oil & Gas Co.'s No. 1 Kelsey-Bass (formerly carried as Los Olmos Oil & Ref. Co.'s No. 1 Kelsey-Bass) ..... T.D. 910 ft.; drlg.
Rio Oil & Gas Co.'s No. 3 Kelsey-Bass, No. 6 Subd., Porciones 75, 76, 77 ..... Rigging up.
San Marcos Oil Co.'s No. 3 Ivey, 450 ft. W of No. 2 .... T.D. 423 ft.; abnd.
San Marcos Oil & Gas Co.'s No. 5 Ivey, 150 ft. from E line, 450 ft. from N line of Share 8, Sub. of Porciones 75, 76 and 77, Jurisdiction of Camargo ..... T.D. 335 ft.; abnd.
San Marcos Oil & Gas Co.'s No. 6 Ivey, 150 ft. from E and N lines of Share 8, Subd. of Porciones 75, 76 and 77, Jurisdiction of Camargo ..... Location.
Suttle & Rutherford's No. 1 Kelsey-Bass, Subd. No. 9, Porciones 75, 76, 77 ..... Abnd. loc.

WEST COLE POOL—WEBB COUNTY

Magnolia Pet. Co.'s No. 6 Benavides, 1,630 ft. to N line, 150 ft. to E line of Sur. No. 660 ..... T.D. 2,345 ft.; running tubing.
French Oil Corp.'s No. 5 Benavides, 1,602 ft. from line, 150 ft. from W line of Sur. 659 ..... T.D. 1,980 ft.; drlg.

ESCOBAS POOL—ZAPATA COUNTY

Allied Gas Co.'s No. 21 Gutierres, 656 ft. to SW line, 500 ft. to SE line of Share 4, Fansler Partition of Comitas grant ..... T.D. 1,459 ft.; comp. 150 bbls.
F. M. Blair & Son's No. 1 Montemayor, 450 ft. to N, 150 ft. to E line of Blk. No. 1, Sur. No. 63 ..... Rigging.
Brogan & Belcher's No. 1 M. Garza, 150 ft. to NE and SE lines, Blk. 62, C. A. Cougias Subd. of Zorro Ranch, Comitas grant ..... T.D. 1,300 ft.; drlg.
F. H. Etheridge's No. 5 Bustamente, 1,540 ft. from NE line, 150 ft. from NW line of Sun 80-ac. lease, Share 35, Fansler's Partition, Comitas grant ..... Location.
O. W. Killam's No. 4 Medina, 500 ft. to NE, 150 ft. to NW lines of Share 34, Fansler Subd. of Comitas grant ..... Location.
O. W. Killam's No. 5 Medina, 850 ft. from NE, 150 ft. from NW lines of Share 34, Fansler's Subd. of Comitas grant ..... Location.
Norden & Morris' No. 3 De Los Santos, 150 ft. to NE and SE lines of Share 6, Fansler Partition of Comitas grant ..... T.D. 1,442 ft.; comp. 9,000,000 ft. gas.
D. M. Shaffer's No. 1 M. Garza, 150 ft. from NE and NW lines of Blk. 56, C. A. Douglas Subd. of Zorro ranch ..... Rigging up.
S.R.C. Oil Co.'s No. 7-D Montemayor, 150 ft. from N and E lines of Blk. 9, Sur. 64 ..... Rigging up.
S.R.C. Oil Co.'s No. 6-D Montemayor, 150 ft. from N and W lines of Blk. 10, Sur. 64 ..... T.D. 1,471 ft.; plugging back.
Winch & Billings' No. 4 Bustamente, 150 ft. to SW and SE lines of 31-ac. Pal-Mar tract, Share 35, Fansler Partition, Comitas grant ..... T.D. 1,479 ft.; comp. 100 bbls.
Winch & Billings' No. 9 Jose Benavides, 500 ft. from NE and 170 ft. from SE line of 31-ac. Pal-Mar tract Share 35, Fansler Partition of Comitas grant .. Spudded in.

CHARCO-REDONDO POOL—ZAPATA COUNTY

Bob & Richey's No. 28 Martinez, 990 ft. from SW line, 615 ft. from SE line, Blk. 24, Duke Subd., Charco Redondo grant ..... Location.
Bob & Richey's No. 29 Martinez, 810 ft. from SW line, 360 ft. from SE line of Blk. 24, W. R. Duke Subd., Charco Redondo grant ..... Location.

MARTINEZ POOL—ZAPATA COUNTY

F. H. Etheridge's No. 2 Winch & Henne, 1,100 ft. to W line, 520 ft. to S line, Sur. No. 286 ..... T.D. 1,745 ft.; tested gas.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 40)

J. E. Anderson's No. 1 Suburban Irrigated Farms, 500 ft. to N line, 600 ft. to E line of C. Logan Sur..... T.D. 1,773 ft.; S.D.
Eckert et al's No. 1 Edwards, 150 ft. to N and W lines of farm in Martinez Sur. ..... T.D. 1,490 ft.; standing.
Callahan Final Oil Co.'s No. 1 B. H. Buck, 900 ft. to E line, 3,300 ft. to S line of farm, in J. M. McGamley Sur. ..... T.D. 650 ft.; drlg.
Dr. Ewell Neil's No. 1 J. Watson, 500 ft. from W line, 1,700 ft. from S line of B. Martinez Sur. ..... T.D. 2,328 ft.; bailing sulphur wtr.
Jones & Voltz' No. 6 Bonkowsky ..... T.D. 650 ft.; drlg.
O. K. Oil Co.'s No. 1 Strum, 150 ft. S of N line, 150 ft. W of E line, John Grant Sur. ..... Drlg.
O. K. Oil Co.'s No. 2 Strum, 150 ft. from S line, 1,051 ft. W of E line, Juan Mantes Sur. ..... Drlg.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio ..... T.D. 1,150 ft.; S.D.
W. R. Swearingen et al's No. 7 Halberdier, 150 ft. W of E line, 540 ft. S of N line, J. M. Perez Sur..... T.D. 800 ft.; drlg.
S. W. Blount's No. 1 S. A. Land Co., I. Perez Sur., 1,000 ft. to N line, 450 ft. to W line of tract ..... T.D. 520 ft.; S. D.
Van Duyn et al's No. 1 Bradden, 5,000 ft. N of Medina River, 350 ft. to E line of tract, 3 miles W of San Antonio ..... T.D. 785 ft.; drlg.

CALDWELL COUNTY

Cole & Moseley's No. 1 Pierce, 150 ft. to NW and SW lines of tract, Solomon Seal Sur. ..... T.D. 825 ft.; S.D. for repairs.
Kistler, Stivers & Hendrix's No. 1 D. Carter, 400 ft. from NW line of Sur., 300 ft. NE of Creek in I. Allen Sur. ..... Rigging up.
Meyer's No. 1 G. C. and W. Walker, Solomon Seal Sur... T.D. 160 ft.; drlg.
M. O. Rayor's No. 3 N. L. Dunlop, 350 ft. to NW line, 150 ft. to NE line of farm, Solomon Seal Sur. ..... T.D. 2,503 ft.; plugged back to Buda.

DUVAL COUNTY

Frank Gravis et al's No. 2 Schallert, 425 ft. to E line, 150 ft. to S line of Blk. 10, Cain & Smith Subd. "A", Sur. No. 255 ..... T.D. 1,430 ft.; no report.
O. W. Killam's No. 1 Sutherland, Sur. No. 7, 3,200 ft. to E line, 150 ft. to N line ..... T.D. 2,700 ft.; drlg.
O. W. Killam's No. 1 Peters, 150 ft. from E line, 450 ft. from N line of SE of Sur. No. 1 ..... Rigged up.
R. A. Thompson's No. 1 Parr, 2,640 ft to W line, 12,160 ft. to S line of San Andres grant ..... T.D. 2,320 ft.; drlg.
Vacuum Oil Co.'s No. 1 Duval Land Co., 260 ft. from S and E lines of Sur. 96 ..... T.D. 1,827 ft.; tested small amount of gas; drilling deeper.

GUADALUPE COUNTY

Barnhill et al's No. 1 H. L. Hoffman, 450 ft. to N and W lines of farm, in John G. King Sur. ..... T.D. 350 ft.; S.D.

GOLIAD COUNTY

Camp & Stanolind's No. 3 Pettus, 2,438 ft. N, 74 deg. E of No. 2 ..... T.D. 4,492 ft.; abnd.
Hoffman & Gooch's No. 1 Fromme, 600 ft. from N and 1,200 ft. from W line of Peter B. Dexter Sur. ..... T.D. 2,279 ft.; rig up to deepen.
Plymouth Oil Co.'s No. 1 Parks, 5 miles NE Goliad..... T.D. 4,625 ft.; waiting on orders.
Neal et al's No. 1 J. M. Pettus, 10,700 ft. to S line, 2,500 ft. to E line of Pedro Trevino Sur. ..... T.D. 4,155 ft.; drilling deeper.

GONZALES COUNTY

Crowder Oil Co.'s No. 1 Preston, 1,000 ft. from W line, 2,000 ft. from N line of W. W. Pace Sur. ..... Spudded in and S.D.
Johnson & Mattock's No. 1 J. James, 12 miles NE of Gonzales city, 900 varas from E line, 300 ft. from S line of tract in M. A. Williams Sur. ..... T.D. 200 ft.; drlg.

HIDALGO COUNTY

Barrett-Kanellos' No. 1 J. B. Brock, 7 miles W and N from Mission (on Monte Cristo road) ..... T.D. 875 ft.; drlg.
LaJoya Oil & Gas Co.'s No. 1 W. L. Hart, 6 miles W from Mission, north of San Fordyce ..... T.D. 4,180 ft.; drlg.
Dayle L. Smith's No. 1, 18 miles W from Edinburg ..... T.D. 4,026 ft.; standing, showing gas.
San Roman Oil Co.'s No. 1 J. T. Lomax, 7,500 ft. from S and E lines of San Roman Sur. ..... Location.
Dayle L. Smith's No. 3 Daskam, SW part of county..... T.D. 210 ft.; drlg.

JIM HOGG COUNTY

L. W. Connor's No. 1 Holbien, 150 ft. from N and E lines of Blk. 7, Sur. 7, Holbien Subd. of Las Animas grant ..... T.D. 1,010 ft.; drlg.
O. W. Killam's No. 1 Hinnant, 150 ft. N of NE cor. of Sur. 84 and in Sur. 614 ..... T.D. 2,167 ft.; drlg.
T. P. Morgan's No. 1 fee, 2,322 ft. to N line, 1,640 ft. to E line of Share 19, Palo Blanco grant ..... T.D. 1,500 ft.; drlg.

JIM WELLS COUNTY

Gulf Prod. Co.'s No. 5 Shaeffer, SE cor. of Sur. No. 89... T.D. 2,457 ft.; drlg. deeper.
Vacuum Oil Co.'s No. 1 Seeligson, 4,500 ft. to W line, 75,000 ft. to S line of Los Jaboncillos Sur. ..... T.D. 3,422 ft.; tested salt water; standing.

KARNES COUNTY

A. E. Edmiston's No. 1 O. L. Cochran, 150 ft. from S line, 500 ft. from E line of farm in D. B. McConnell Sur. ..... T.D. 1,800 ft.; standing.
V. F. Neuhaus' No. 1 Della B. Tips, 1,050 ft. from SE line, 960 ft. from SW line of 1,037.5 ac., Carlos Martinez Sur., 5 miles SE of Kennedy ..... T.D. 3,620 ft.; abnd.

KENDALL COUNTY

Dixon Oil Co.'s No. 1 Ottmar Behr, 823 ft. from S and N lines of Jessie Wilson Sur., 3 miles S of Sisterdale ..... T.D. 2,708 ft.; standing.
Fred S. Dibble's No. 1 Ellebrach, Sur. 77, N part of county ..... T.D. 50 ft.; S.D.

KERR COUNTY

George Ball's No. 1 F. A. Karger, near Kerrville ..... Rig on ground.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 28. T.D. 1,312 ft.; standing.
Evans & Gant's No. 2 Love, 150 ft. S and W line of Sur. 1,593 ..... T.D. 5,849 ft.; pulling csg. to deepen.
Verde Oil & Gas Co.'s No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1,923, Hamilton Sur., 4 miles S from Center Point. T.D. 200 ft. Carried to this depth and abandoned as Herber Oil Co.'s No. 1 J. D. Witt ..... Rigging up to deepen to 4,500 ft.

LIVE OAK COUNTY

Coastal Oil Finding Co.'s No. 1 Handley ..... Making location.
J. A. Harper's No. 1 fee, 2,130 ft. to N line, 510 ft. to E line of farm, J. Pointevant Sur. No. 37 ..... Spudded in and standing.
Henderson Coquat's No. 1 Hewitt, 250 ft. from N and E lines of SW of Sec. 5, Thomas Adams Sur. ..... T.D. 1,785 ft.; S.D.
Henderson Coquat's No. 2 Sanger, 1,280 ft. NW of No. 1 Sanger ..... Rigging up.

LEE COUNTY

Henderson & Holden's No. 1 Dismuke, 600 ft. to E line, 150 ft. to N line of farm, J. Maxmillan Sur. ..... Rigging up.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T.D. 3,890 ft.; S.D.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur. ... T.D. 2,300 ft.; S.D.
Chadwick et al's No. 1 Hickey, 1,000 ft. to NW line, 300 ft. to NE line of farm in Varreiman Sur. ..... T.D. 20 ft.; spudded in.
Washington-Lee Oil Co.'s No. 1 L. Hicket, 1,100 ft. from N line, 200 ft. from E line of tract in J. D. Varreiman Sur. ..... Location.

McMULLEN COUNTY

Jacob, Buzzini & Pickett's No. 1 Brewer, 750 ft. NE of Pickett's No. 1 Nelson ..... T.D. 565 ft.; drlg.
V. G. Schimmel's No. 1 F. A. Hale, 850 ft. from N line, 1,580 ft. from W line of Sur. No. 63 ..... T.D. 400 ft.; comp. 10,000,000 ft. gas.
V. G. Shimmel's No. 2 Hale, 300 ft. S. of No. 1 Hale..... Rigging up.

MAVERICK COUNTY

I. N. Boicourt's No. 1 Bandera, School Land ..... T.D. 2,284 ft.; standing.

MEDINA COUNTY

Frank A. Brown's No. 1 Fohn, 150 ft. from E line, 790 ft. from N line of J. F. Torry Sur. No. 113 ..... T.D. 922 ft.; twisted off drill stem, fishing.
C. J. Webster Oil & Gas Co.'s No. 1 Adams, 2,450 ft. to N line, 160 ft. to E line of Jos. Hillemeyer's No. 25. T.D. 2,610 ft.; drlg.

MILAM COUNTY

H. W. Elliott's No. 1 Marek, 767 ft. from N line, 500 ft. from W line of 160-ac. tr. in B. Wickson Sur. ..... T.D. 3,000 ft.; S.D.
Red Bank Oil Co.'s No. 3-A J. A. Foster, 5,243 ft. to SW line, 150 ft. to NW line of farm ..... T.D. 5,055 ft.; drlg.
Frank A. Yeager's No. 1 Hose, 750 ft. from E line, 150 ft. from S line of lease in E. Allen Sur. ..... T.D. 1,376 ft.; set csg.

NUECES COUNTY

C. E. McCarthy's No. 1, W of Corpus Christi ..... Making location.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 ..... T.D. 2,530 ft.; resuming drilling.

SAN PATRICIO COUNTY

John F. Camp's No. 1 Jackson, SW cor. of SW Sec. 30, 3 miles N from Edroy ..... Drilling water well.

STARR COUNTY

Davenport et al's No. 1 Wells, 30 miles W of Mission .. T.D. 1,093 ft.; drlg.
Guien Sabe Oil & Gas Co.'s No. 1 H. K. Kusch, 225 ft. from E line, 150 ft. from N line of Tract 11 in Porcion 75 ..... T.D. 135 ft.; comp. 10 bbls.
R. E. Johnson's No. 1 Goodrich, 1,214 ft. from N line 1,065 ft. from W line of tract, 1½ miles N of Rio Grande City ..... T.D. 1,200 ft.; drlg.

Strauch Oil Corp.'s No. 1 M. E. Salinas, 155 ft. from N and W lines of lease in Porcion 80, Share 38 ..... T.D. 600 ft.; drlg.
R. B. Suttle's No. 1 Guerra, 2,000 ft. to N line, 270 ft. to W line of Porcion 110 ..... T.D. 810 ft.; no report.
Jess Williams' No. 1 Welsh, 1,120 ft. to W line, 1,500 ft. to N line of tract in Pedernal grant ..... T.D. 425 ft.; set csg.

TRAVIS COUNTY

C. R. Franklin et al's No. 1 J. Wilson, 160 ft. from N and W lines of farm in A. Alexander Sur. ..... T.D. 1,180 ft.; S.D.
Fuchs et al's No. 1 Shiffler, 1,000 ft. to N line, 160 ft. to E line of farm, A. C. Caldwell Sur. ..... T.D. 515 ft.; standing.
Ray & Henze's No. 1 Hatech, in C of tr. in S. Hamilton Sur. ..... T.D. 540 ft.; S.D.

WEBB COUNTY

O. W. Killam's No. 4 Bruni, 5,050 ft. to NE line, 7,675 ft. to SE line of El Ranchito tract, J. V. Borrego grant ..... Derrick.
Power & Dettenhalm's No. 1 Cowan & Goss, 1,870 ft. from W line, 1,656 ft. from N line of Sur. No. 1,606 ..... T.D. 405 ft.; standing.
Fansler, Johnson & Peacock's No. 1 Laurel, 425 ft. to N line, 600 ft. to E line of Blk. 10, Sur. 271 ..... T.D. 1,320 ft.; drlg.
W. R. Shankle's No. 1 Ellison Furniture & Carpet Co., 150 ft. from SW and NW lines of Blk. 2, Sur. 466 .. Location.

WILLIAMSON COUNTY

Burns et al's No. 1 Wilder, 1,800 ft. to N line, 200 ft. to W line of tr. in H. Owens Sur. ..... T.D. 1,480 ft.; no report.
Hays & Gee's No. 1 E. G. Johnson, 1,800 ft. from N line, 170 ft. from E line of tr. in B. C. Low Sur., S of Georgetown ..... T.D. 1,595 ft.; S.D.
McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract in B. Manlove Sur. .... Rigging up.
G. B. Peterman's No. 1 Galler, 1,800 ft. from S line, 150 ft. from W line of 140-ac. tract in H.Y.&B.R.R. Sur. ..... T.D. 1,100 ft.; drlg.
R. S. Wilson's No. 1 Speckles, 150 ft. N of road, 600 ft. from W line of farm in J. Jordan Sur., 1 mile N of Coupland ..... T.D. 875 ft.; S.D.

WILSON COUNTY

A. M. Blume's No. 1 Nickolson, C. Diaz Sur. ..... T.D. 1,600 ft.; S.D.

ZAPATA COUNTY

Ballard & Mercer's No. 1 Flores, 500 ft. from NE line, 580 ft. from SE line of Blk. 27, Porcion 37 ..... T.D. 1,635 ft.; drlg.

ZAVALLA COUNTY

Carpenter & Jenkins et al's No. 1 John Wolf, Sec. 8, Abstract 1,199 ..... T.D. 767 ft.; setting csg. to test show of gas.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 36)

Hawkins & Antoon's No. 1 Newton, Sec. 1-7-11 ..... W.O.S.R. 2,609 ft.
Hudson & Bird's No. 1 Walden, 480 ft. N, 300 ft. E, SW cor. SW NE, Sec. 26-8-11 ..... S.D. 2,454 ft.
W. F. Lacey's No. 2 McNeely, 550 ft. E, 330 ft. N, SW cor. NE NE, Sec. 14-7-11 ..... Location.
Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11 ..... S.D. 1,606 ft.
Loring Oil Co.'s No. 18 Bowman-Hicks, 1,280 ft. S, 275 ft. E, NW cor. SW NW, Sec. 15-7-12 ..... Drlg. out cmt. 4,000 ft; T.D. 4,428 ft.
Ben Merritt, tr.'s No. 2 Byrd, Sec. 1-7-11 ..... S.D.; W.O. 2,579 ft.
Ohio Oil Co.'s No. 14 Bowman-Hicks, Sec. 3-7-12, 330 ft. S and W, NE cor. NW SW ..... Drlg. 200 ft.
Eddie Seif's No. 3 Jacobs, Sec. 1-7-11, 150 ft. N and E, SW cor. SE SE ..... W.O.S.R. 2,518 ft.
Stovall Drlg. Co.'s No. 3 Nulton, 330 ft. N and W, SE cor. SE NE, Sec. 2-7-13 ..... Location.

ARKANSAS

UNION COUNTY—EL DORADO

Ark. O. & G. Co.'s No. 4 Anderson, Sec. 31-17-15, 2,005 ft. S, 150 ft. W, NE cor. NW SW ..... Testing 2,190 ft.
Lion O. & R. Co.'s No. 9-A G. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15 ..... Arranging to resume drlg. 7,255 ft.
Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 ..... S.D. 2,608 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. S½ NW, Sec. 11-18-13 ..... T.A. 3,586 ft.
Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13 ..... Location.
Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13, 330 ft. S and W, NE cor. SE NW ..... T.A. 3,545 ft.

EAST TEXAS

PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur. ..... S.D. 3,194 ft.
Nat. Gas Prod. Co.'s No. 3 Mays, 158 ft. S, 443 ft. W, NE cor. 42.5-ac. tr., Jane Thorpe Sur. ..... S.D. 3,038 ft; high wtr.
United Prod. Co.'s No. 12 Werner, 1,959 ft. W, 556 ft. N, SE cor. 66.6-ac. tr., B. C. Jordan Sur. ..... Derrick.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. ... Location.

MISSISSIPPI

HINDS COUNTY

James Alexander, tr.'s No. 1 Fuller, Sec. 26-6n-1e, C NW NE ..... Location.
Ferguson-Fuller et al's No. 1 Cruse, Sec. 34-6n-1e, 420 ft. E, 170 ft. N, SW cor. NW ..... Derrick pattern.
Love Pet. Co.'s No. 1 Interior Lbr. Co., Sec. 2-5n-1e, 90 ft. W, 270 ft. N, SE cor. SW ..... Rig on location.

RANKIN COUNTY

Cummins & Montgomery's No. 1 Ivey, Sec. 13-5n-1e, NE Lot 10, Blk. D, E. Jackson Pl., First Addn. ... Derrick.
Meredith et al's No. 1 Strowder, Sec. 12-5n-1e, SE cor. SW NE ..... Set 10-in. 45 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

Company, farm and location—	Remarks:
HINDS COUNTY	
Atkins et al's No. 1 Crane Lawrence, Sec. 23-6n-1e, 300 ft. E, 132 ft. N, SW cor. NE SE	Derrick.
Miss.-Minn. Oil Co.'s No. 1 Edwards Land Co., Sec. 23-6n-4w, 1,200 ft. N and E from center of Sec.	Moving in rig.
Southern Pet. Co.'s No. 1 Wilton (was Tri-State O. & G. Co.'s), 320 ft. E, 240 ft. N, SW cor. SE NE, Sec. 28-6-1e	Waiting orders 2,498 ft.
JASPER COUNTY	
Bay Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9	Washing to bottom 3,139 ft.
LOWNDES COUNTY	
Lowndes County Oil & Dev. Co.'s No. 1 Carr est., Sec. 34-17-16e, 1,320 ft. E, 330 ft. S, NW cor. Sec.	Rig on location.
MONROE COUNTY	
Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19	Dry and abd. 3,015 ft.
McAlpine et al's No. 1 Cowart, second hole, Sec. 2-13-19	Dry and abd. 3,793 ft.
NEWTON COUNTY	
Bob Dalton's No. 1 Majure, 400 ft. N, 300 ft. E, SW cor. SE, Sec. 25-6n-11e	S.D. 840 ft.
NOXUBEE COUNTY	
Thompson & Donohoue's No. 1 Donohue, Sec. 25-16n-17e	S.D. 1,735 ft.
RANKIN COUNTY	
Attkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-2e	Waiting on csg. 2,428 ft.
James Alexander, tr's No. 1 Taylor & Watkins, Sec. 1-5n-1e, 175 ft. N, 75 ft. W, SE cor.	Set 6⅝-in. 2,343 ft.
Henslee et al's No. 1 Tanner, Sec. 14-5n-1e, 400 ft. S, 200 ft. E, NW cor. NE NE	Rigging up.
Majestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e	Derrick.
Muse & Muse's No. 1 Cotton, Sec. 14-5n-1e, 1,320 ft. S, 200 ft. E, NW cor. NE NW	Rigging up.
SCOTT COUNTY	
M. U. Culley et al's No. 1 Owens, Sec. 2-8-9	Derrick.
SHARKEY COUNTY	
United Gas Public Service Co.'s No. 1 Lenhart, Sec. 14-14n-6w, 660 ft. N of C of S line of Sec.	Rigging up.
WARREN COUNTY	
Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-2	S.D. 2,607 ft.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 36)

NATCHITOCHES PARISH

Dr. H. S. Gerson's No. 1 Smith, Sec. 11-10-8, 2,000 ft. N, NE cor. of irregular Sec. 10, in Sec. 11 ..... S.D. 585 ft.
Dr. H. S. Gerson's No. 2 Smith, Sec. 11-10-8, 200 ft. N and 300 ft. W of NE cor. ..... Location.
Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10 .. S.D. 1,518 ft.
R. A. Keaton's No. 1 Stephens, Sec. 25-10-6, 320 ft. N and W, SE cor. NW NW ..... S.D. 178 ft.
C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10 ..... S.D. 1,380 ft.

OUACHITA PARISH

J. J. Potts, agent's No. 1 Robinson-Reed, Sec. 11-18-4e, 1,745 ft. N, 780 ft. E, SW cor. Sec. ..... Rigged up and S.D.; high wtr.
Wilson & Mitchell's No. 1 Williams, Sec. 5-16-1e, 330 ft. E, 240 ft. S, NW cor. SW SE ..... S.D. 1,890 ft.

RED RIVER PARISH

La. Oil Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11 ..... Spudded and S.D. 50 ft.

RICHLAND PARISH

National Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-18n-7e ..... S.D. 2,515 ft.

SABINE PARISH

Baird & Stone's No. 1 McNeely, Sec. 14-7-11 ..... Rigging up.
Beene et al's No. 1 Ezernack, Sec. 2-7-13, 1,070 ft. S, 250 ft. W, NE cor. ..... S.D. 1,200 ft; high wtr.
Coates Pet. Co.'s No. 1 Parie, Sec. 3-7-13, 300 ft. S and W, NE cor. NE SE ..... Comp. 375 bbls. 2,405 ft.
Coates Pet. Co.'s No. 1-B S. S. Martinez, Sec. 3-7-13, 330 ft. S and W, NE cor. SE NE ..... Location.
W. M. Coates' No. 1 Stille, 330 ft. N, 660 ft. W, SE cor., Sec. 35-8-13 ..... Derrick.
W. M. Coates et al's No. 1 Mansfield Hardwood Lbr. Co., Sec. 36-8-13, SW cor. SE SE ..... Drlg. 1,995 ft.
B. A. Ferrell's No. 1 Haley, Sec. 6-7-12, 300 ft. S and E, NW cor. NW SW ..... Location.
R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13 ..... Coring black shale 4,654 ft.
T. M. LeGrand's No. 1 Peterson, 330 ft. N and E of C, Sec. 34-7-13 ..... S.D. 2,243 ft.
Geo. LeGrand's No. 1 McGough, Sec. 3-8-10 ..... Derrick.
J. J. Keen, tr.'s No. 1 Belton (no check), Sec. 31-9-13 .. S.D. high wtr. 2,700 ft.
E. F. Neely's No. 1 Cobb & Alford, Sec. 14-7-11, 200 ft. S, 100 ft. E, NW cor. NE SW ..... Set 10-in. 101 ft., 6-in. 2,428 ft.
Pelican Nat. Gas Co.'s No. 1 Buckley, Sec. 6-7-10, 330 ft. N and E, SW cor. Sec. ..... Tested dry 2,800 ft.
Service Drlg. & Royalties Corp.'s No. 1-B Gardner, Sec. 7-7-10, 330 ft. S and E, NW cor. SW NW ..... Tested dry, waiting orders 2,571 ft.
J. E. Smitherman's No. 1 Smith, Sec. 7-7-10, 330 ft. S and E, NW cor. NW SW ..... Drlg. 2,300 ft.
Southland Drlg. Co.'s No. 1 Frank Martinez, 330 ft. S and W, NE cor. NW, Sec. 11-7-13 ..... Drlg. 1,420 ft.
Southland Drlg. Co.'s No. 2 F. Martinez, Sec. 11-7-13, 330 ft. S and E, NW cor. NE NW ..... Location.
Southland Drlg. Co.'s No. 1 Gilbert Martinez, Sec. 2-7-13, 330 ft. N and W, SE cor. SW SW ..... Derrick pattern.
Southland Drlg. Co.'s No. 1 C. E. Patterson, Sec. 2-7-13, 330 ft. N and E, SW cor. Sec. ..... Derrick.
A. H. Thames' No. 1 Edward est., 150 ft. NW SE cor. NE SE, Sec. 8-8-13 ..... S.D. 1,200 ft.
C. H. Tuttle et al's No. 1 Byrd, Sec. 7-7-10, 330 ft. S and E, NW cor. ..... Set 6-in. 2,442 ft.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... S.D. 3,545 ft.

ARKANSAS

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenwelder, Rhea & Kitchen, Sec. 13-17-22 ..... S.D.; W.O. 814 ft.

CLAY COUNTY

S. C. Joffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-8 ..... S.D. 1,350 ft.

CLEVELAND COUNTY

Crum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-12 ..... Rigged up and S.D.

CLEBURNE COUNTY

(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

DALLAS COUNTY

J. H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. SE, Sec. 11-9-15 ..... Arranging to resume drlg. at 2,514 ft.
Zepp O. & G. Co.'s No. 3 Hillman, Sec. 20-10-13, 180 ft. N, 450 ft. E, SW cor. NW NE ..... Location.

DREW COUNTY

Co-Operative Dev. Co.'s No. 1 Ogles, Sec. 35-15-5, 330 ft. S and E, NW cor. NE NW ..... S.D. 1,890 ft.

HOT SPRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ..... S.D. 1,300 ft.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7 ..... S.D. 2,800 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-19 ..... Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D.; W.O. 3,570 ft.

MILLER COUNTY

W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27 ..... S.D. 1,955 ft.

OUACHITA COUNTY

Copenhaven et al's No. 2 Berg, C SE SE, Sec. 13-15-17 .. S.D. 2,011 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... T.A. 2,909 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... S.D.; W.O. 1,020 ft.
E. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23 ..... Drlg. 1,287 ft.

PRAIRIE COUNTY

Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 3-4n-6w ..... Partly rigged up and S.D.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... S.D.; T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 ..... S.D. 1,860 ft.

SEVIER COUNTY

Tristate Oil Co.'s No. 1 Grimble, Sec. 34-8-22, S½ SW .. S.D. 950 ft.

UNION COUNTY

Drillers Oil & Dev. Co.'s No. 1 Pickering, 220 ft. N, 668 ft. E, SW cor. NW NE, Sec. 1-17-16 ..... W.O.S.R. 2,134 ft.
H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14 ..... Drlg. sandy shale 2,155 ft.
L. M. Hill et al's No. 1 J. W. Barnes, Sec. 21-19-16, NE cor. Sec. ..... Derrick.
Sunby et al's No. 2 Perdue, Sec. 33-16-14, 75 ft. S, 150 ft. E, NW cor. Sec. ..... W.O. 3,247 ft.
Wilson & Chapman's No. 1 King, Sec. 3-18-13, 330 ft. N and E, SW cor. NE NE ..... Derrick.
Wilson & Chapman's No. 1-A D. Norman, 330 ft. S and E, NW cor. N½ NE SE, Sec. 3-18-13 ..... Derrick.
Wilson & Chapman's No. 1 K. D. Parker, Sec. 3-18-13, 330 ft. N and E, SW cor. S½ NE SE ..... Rigging up.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... S.D. for funds 1,795 ft.

YELL COUNTY
(Cable tools)

Tegmeir & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Logan & Elliott's No. 1 Smith, 9,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur. ..... S.D. 4,505 ft.
Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 200 ft. W, SW cor. J. H. Dyer Sur. ..... S.D. 1,880 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... S.D. 3,000 ft.

CASS COUNTY

J. F. Morrisey's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur. ..... S.D. 3,670 ft.
Davis & Pigg's No. 1 Roy Bryan, SW cor. Roy Bryan 88-ac. tr., Albert H. Lattimer Sur. ..... S.D. 2,860 ft.
William S. King's No. 1 D. W. McDonald, Martha Ingram Sur., 688 ft. W, 1,343 ft. N, SE cor. Lot 5, McDonald 61-ac. tr. ..... Rigging up.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... S.D. 4,390 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. .... S.D. 2,280 ft.
Olds & King's No. 2 Anthony, John C. Byers Sur. ..... S.D. 1,750 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 955 ft.

HARRISON COUNTY

Lloyd Oil Corp.'s No. 1 E. S. Timmons, 150 ft. from N line to 350 ft. from E line of 105-ac. tr., Findley Sur. ..... S.D. 4,195 ft.
Ryan Cons. Pet. Corp.'s No. 1 J. M. Fuhr, 1,300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur. ..... Derrick.

MARION COUNTY

Geo. Hindeman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... S.D. 2,380 ft.

PANOLA COUNTY

Hoffer et al's No. 1 Cameron Lbr. Co., center 1,306-ac. tr. in W. M. A. LaGrove Sur. ..... Derrick.
Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur. .. Spudded and S.D.
G. A. Davidson's No. 1 Latham, Wm. Rich Sur. ..... S.D. 2,394
J. L. Nelson et al's No. 1 J. W. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in James Hanks Sur. ..... S.D. 3,055 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. .... S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. .... S.D. 2,280 ft.

SHELBY COUNTY

Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ... S.D. 1,028 ft.
Harry Elliott's No. 1 Pickering Lbr. Co., 1,000 ft. N, 150 ft. E, SW cor. 361-ac. tr., G. H. Patterson Sur. .. Setting 6-in. 1,487 ft; T.D. 1,495 ft.
K. H. Francis' No. 1 John Mims, Mary Smith Sur. .... S.D. 3,334 ft.
H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 200 ft. E, SW cor. J. A. Morris' 109-ac. tr., Wm. English Sur. ..... S.D. 2,600 ft.
Henry Maulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur. ..... S.D. 3,246 ft.
McRoby et al's No. 1 Windham, Wm. Leach Sur., on Windham 296-ac. tr. ..... S.D. high wtr. 3,393 ft.
Ridgeway et al's No. 1 Polley, Domingues Gonzales Sur., 3,150 ft. E of SW cor., 160 ft. N at right angles of Polley 457-ac. tr. ..... Set 8-in. 822 ft.
C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur. ..... S.D. 20 ft.
Tenant et al's No. 1 J. Henry, C. Z. Walker Sur. ..... S.D. 3,457 ft.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 39)

Eclipse Oil Co.'s No. 1 Barrow, Jesse DeVore Sur., 50 ft. from N line and 31 ft. from E and W lines 37-acre tract ..... Drlg. gumbo 1,156 ft.

PIERCE JUNCTION—HARRIS COUNTY

Anderson & Plummer's No. 4 Whitehead (W.O.) ..... T.D. 4,521 ft.; no report.
Gulf Prod. Co.'s No. 9 Cain, Jas. Hamilton Sur. No. 98, 150 ft. N of No. 20 Taylor and 290 ft. E of W line of Cain lease ..... Spudded.
Isaacs & Carwile's No. 1 Settegast (W.O.) ..... T.D. 3,393 ft.; pumped salt water; abnd.
Navarro Oil Co.-Texas Exp. Co.'s No. 16 Dooley (W.O.), J. Hamilton Sur., 50 ft. from W line and 487 ft. from S line tract ..... T.D. 5,535 ft.; plugged to 4,900 ft.; standing.
Rio Bravo Oil Co.'s No. 21-A Settegast (D.D.), J. Kopman Sur., 400 ft. S and 200 ft. E of NE cor. "A" lease ..... Cutting and pulling screen 4,255 ft.
Rio Bravo Oil Co.'s No. 23-A Settegast, Jos. Kopman Sur. No. 44, 1,375 ft. S and 200 ft. W of NE cor. "A" lease ..... Rig.

RABBS RIDGE—FORT BEND COUNTY

Cullen & West and Gulf Prod. Co.'s No. 2 George, John Rabb Sur., 1,000 ft. due E of No. 2 ..... Sand showing oil 3,220 ft.; cmtd. 3,150 ft.
Cullen & West and Gulf Prod. Co.'s No. 4-A Lockwood & Sharp, J. Rabb Sur., 550 ft. W of No. 2-A ..... Abnd. location.
Cullen & West and Gulf Prod. Co.'s No. 1-B Lockwood & Sharp, John Rabb Sur., 300 ft. N and 300 ft. W of NW cor. of George tract ..... Standing 4,925 ft.
Gulf Prod. Co.'s No. 2 Mary D. Booth Meyers, J. Rabb Sur., 600 ft. E of No. 1 in center of tract ..... Set 3 joints 4½-in. screen 5,240 ft.; comp. flowing 2,100 bbls., 630 lbs. pressure, ¼-in. choke.
Gulf Prod. Co.'s No. 1 T. R. Booth, Samuel Kennedy Sur., 475 ft. N of S line of Booth 475-acre tract, due N offset No. 1 Booth-Meyers ..... Rig.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 20 Cade, N. Fitzsimmons Sur., 161 ft. W of No. 15 and 146 ft. SW of No. 17..... Shut down 60 ft.
Yount Lee Oil Co.'s No. 24 Cade, 1,010 ft. from NE line and 1,250 ft. from NW line of N. Fitzsimmons Sur... T.D. 5,497 ft.; cmtd. to 5,472 ft.
Yount Lee Oil Co.'s No. 25 Cade, N. Fitzsimmons Sur., 100 ft. due W of No. 23 ..... Drlg. sand rock 5,230 ft.
Yount Lee Oil Co.'s No. 26 Cade, N. Fitzsimmons Sur., 600 ft. S of No. 24 ..... Derrick.
Yount Lee Oil Co.'s No. 27 Cade, N. Fitzsimmons Sur., 600 ft. N of No. 21 in line with Nos. 22 and 23 ..... Location.
Yount Lee Oil Co.'s No. 1 Broussard & Orme, 300 ft. E of N cor. of N. Fitzsimmons Sur., in Martin Dunman Sur. ..... Location.

DAMON MOUND—BRAZORIA COUNTY

Intercoastal Oil Co.'s No. 6 Wisdom (D.D.), A. Darst Sur., Blk. 51, 2,550 ft. from NE line and 1,150 ft. from NW line of 840-acre tract ..... Pulling screen to deepen 3,809 ft.
The Texas Company's No. 2 Cave, 165 ft. NE and 55 ft. N. 45 deg. W from S cor. Lot B, Blk. 73, Wisdom Subd., A. Darst Sur. ..... Spudded.

NASH—BRAZORIA COUNTY

Harrison & Abercrombie's No. 15 Nash (D.D.), Thos. Alsbury League ..... Abnd. 6,750 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 4 Davis (D.D.), Kokernot Sur. ..... No report.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 128-A "B" ..... Derrick.
Rio Bravo Oil Co.'s No. 127-A "B" ..... Drlg. shale 999 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 14 Mayes, E. H. R. Wallis Sur., 650 ft. due E of No. 11 in line with No. 9 ..... Set 2 joints 7-in. screen 1,873 ft.; tested salt water; pulling screen to deepen.

MARKHAM—MATAGORDA COUNTY

L. P. Smith et al's No. 1 Hudson, 750 ft. out of SE cor. Blk. 15, Henry Parker Sur. ..... Spudded.
United North & South Oil Co.'s No. 1 McDonald, I.&G.N. Sur., Blk. 9, Sec. 5, 460 ft. S and 80 ft. E of NW cor. 35-acre tract ..... Rigging up.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTY

Manning Trust Co.'s No. 3 Sergeant, Jas. McFaddin Sur., 600 ft. from W line and 500 ft. from N line of Humble lease ..... Abnd. in cap rock 825 ft.

REFUGIO—REFUGIO COUNTY

E. M. Jones' No. 1-B Mitchell (D.D.), 250 ft. NW of SE line and 250 ft. SW of Mission River ..... Pulling screen to deepen 5,441 ft.
Larco Gas Co.'s No. 4 Strauch heirs, 150 ft. from N line and 150 ft. from W line, Lot 6, Blk. 2..... Topped sand showing oil 3,686 ft.; cem. 6⅝-in. casing; standing.

SOUTH LOUISIANA FIELDS
IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Shell Petroleum Corp.'s No. 2 Heyd, 225 ft. out of NE cor. of Sec. 13-9s-7w ..... Drlg. shale and lime 3,420 ft.
Shell Petroleum Corp.'s No. 1 Fontenot, Sec. 7-9s-6w, 450 ft. due E No. 2 Heyd ..... Drlg. rock 1,582 ft.

JENNINGS—ACADIA PARISH

Phillippi & Artigues' No. 1 Valle (D.D.), 900 ft. S and 80 ft. E of NW cor. Sec. 47-9s-2w ..... Temp. abnd. 1,916 ft.
Kathleen Oil Co.'s No. 1 Syndicate fee (W.O.), Sec. 46-9s-2w ..... T.D. 3,924 ft.; cutting and pulling screen to deepen.
Yount Lee Oil Co.'s No. 10 Housierre-Latrielle, 5,435 ft. E and 1,070 ft. N of SW cor., Sec. 47-9s-2w..... T.D. 8,655 ft.; cmtd. 5-in. csg. 8,640 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 23 Watkins (W.O.), 2,495 ft. W. and 132 ft. N of SE cor., Sec. 13-12s-10w..... T.D. 2,844 ft.; set whipstock 2,573 ft.
Calcasieu Oil Co.'s No. 26 Watkins (W.O.), 1,199 ft. N and 1,843 ft. W of SE cor. of Sec. 13-12s-10w..... Standing 3,001 ft.
Calcasieu Oil Co.'s No. 31 Watkins, 1,402 ft. W and 1,120 ft. N of SE cor. of Sec. 13-12s-10w ..... Cap rock 3,184-98 ft.; standing.
The Texas Company's No. 8-B State, 1,875 ft. N and 600 ft. E of SE cor. of Sec. 13-12s-10w in Sec. 9.... Drlg. 3,320 ft.
Union Sulphur Co.'s No. 1 Gulf land (Humble lease), 284 ft. N, 30 ft. W of SE cor., Sec. 11-12s-10w..... S.D. for high water 4,446 ft.
Union Sulphur Co.'s No. 1 Gulf land (Pure Oil Co. lease), 1,420 ft. N, 400 ft. W of SE cor., Sec. 11-12s-10w ..... S.D. for high water 3,136 ft.
Yount Lee Oil Co.'s No. 44 State, 1,110 ft. N and 1,915 ft. W of SE cor., Sec. 13-12s-10w ..... Location.
Yount Lee Oil Co.'s No. 45 State, 1,220 ft. N and 810 ft. W of SE cor., Sec. 13-12s-10w ..... Location.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 9 Gray (D.D.) ..... Salt 3,203-3,474 ft.; sidetracked to sand 2,605 ft.; set 40 ft. of 3-in. screen; comp. flowing 800 bbls. P.L. oil, ½-in. choke, 200 lbs. pressure.

PORT BARRE—ST. LANDRY PARISH

Gulf Refining Co.'s No. 1 Wilson & Cockran, Sec. 4-6s-5e, 100 ft. out of middle SW cor. 502-acre tract... Spudded.

SULPHUR —CALCASIEU PARISH

Union Sulphur Co.'s No. 768 fee, 375 ft. N and 188 ft. W of SE cor. SW NW of Sec. 29-9s-10w ..... Rig.
Union Sulphur Co.'s No. 769 fee, 295 ft. S, 918 ft. W of C of Sec. 29-9s-10w ..... Location.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

Grant & Baker's No. 1 Chesley, W. C. White Sur., 150 ft. from NW line and 150 ft. from SW line of 28-acre tract (northeast of Raccoon Bend Field)..... Derrick.
O'Hara Oil & Gas Co.'s No. 1 Neilous, J. C. Cummings Hacienda Sur., 650 ft. N of No. 1 Schroeder in 18-acre tract, north edge Mill Creek ..... Derrick.
Pomacal & Boletka's No. 1 Schebajsa, 329 ft. N, 72 deg. E of N cor. B. Dottery Sur., near center of SW line of S. F. Austin 4 League on west fork of Mill Creek.. Set 10-in. csg. 120 ft.; standing.

BRAZORIA COUNTY

W. D. Southerland's No. 1 C. W. Chapman, 294 ft. from S line and 104 ft. from E line of Lot 2, Andrew Robinson Sur. ..... Standing 1,514 ft.
The Texas Company's No. 2 Belcher, Harvey N. Little Sur., 1,728 ft. southeasterly from N cor. of S half of Sur., along NE line and thence 123 ft. at right angles ..... Drlg. shale and lime 5,380 ft.
United Oil Syndicate's No. 2 Levitt, John Peske Sur., 75 ft. NW of No. 1 ..... Location.

BURLESON COUNTY

Marek & Son's No. 3 A. Marek, N. McFaddin Sur., 1,068 ft. N and 225 ft. W of SE cor. of tract..... Standing 2,210 ft.
M. O. & T. Corp.'s No. 1 Rigers ..... Drlg. shale 2,065 ft.

FORT BEND COUNTY

O'Hara et al's No. 1 Brown, Pilant Lake, Wm. Barrett and Abner Harris Sur., 600 ft. out of SW cor. of Brown 600-acre tract ..... Derrick.
Stone & Wyman's No. 1 Beard, H.&T.C. Sur. No. 118, 1,150 ft. from NW line and 1,392 ft. from NE line.... Drill stem stuck 975 ft.

GRIMES COUNTY

Barnett et al's No. 1 Dodd, Timothy Jones Sur., 280 ft. N Cobb & Rasmussen's No. 1 Dodd ..... Rig.
Rianjo Oil Co.'s No. 2 Cuthrell, Patrick B. O'Connor Sur., 150 ft. S, 10 degrees E of No. 2 ..... Drlg. 1,152 ft.
Stanolind Oil & Gas Co.'s No. 1 Mary Sullivan, A. Yeamens Sur., 998 ft. out of SE cor. of 712-acre tract.... Location.

HARRIS COUNTY

Givens & Daybault's No. 1 Lobit, David Middleton Sur., Blk. 19, Lobit Subd. ..... Drlg. sand and boulders 2,810 ft.
Louisiana Oil & Dev. Co.'s No. 1 J. W. Wilson, W. Ritchie Sur. ..... Shut down 420 ft.

Shubert & Alexander's No. 1 Herman Hale, 1,058 varas E of NW cor. R. A. Hanks Sur., thence 790 varas S and thence 70 varas W 74 deg. ..... Shut down 2,720 ft.

JASPER COUNTY

Hext Drlg. Co.'s No. 1 Flourney, B. F. Jones Sur., 900 ft. NW of Helmerich & Payne's No. 1 Flourney..... Drlg. 3,710 ft.

JEFFERSON COUNTY

Brown et al's No. 1 M. O. Todd, 200 varas S and 58 varas E of NW cor. of Wm. Carr Sur. ..... Derrick.
John I. Pipkin and Elam's No. 1 Broussard, McGaffey Sur., 800 ft. from S line in center E and W of 205-acre tract ..... No report.
Texas Gulf Sulphur Co.'s No. 4 Thomas, Fannett, Wm. H. Smith Sur., 1,500 ft. S and 350 ft. W of NE cor. tract ..... Sulphur test.
Westbury Oil Co.'s No. 4 West, 450 ft. W and 4,210 ft. S of NE cor. of T. D. Yoakum Sur. ..... Shut down in gum o 600 ft.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill ..... Gumbo 1,015 ft.; shut down.
J. T. May et al's No. 1 Dunman, J. C. Martin League... Location.

MATAGORDA COUNTY

United North & South Oil Co.'s No. 1 Stoddard, J. C. Keller Sur., 150 ft. W and 545 ft. N of SE cor. Blk. 53, Buckeye Townsite ..... Drlg. shale 7,365 ft.

MONTGOMERY COUNTY

Herman Heep et al's No. 1 Cartwright, 2,851.6 ft. southerly along W line from NW cor. of John O. Davis Sur. and thence 450 ft. E from said line..... Rig.
Pevehouse Oil Co.'s No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1,562-acre tract and 2,226 ft. E of W line of H.&W. 1,870-acre tract ..... Drlg. sand and boulders 3,240 ft.

NEWTON COUNTY

R. T. Briscoe et al's No. 1-A Joe Inman, 1,950 ft. E and 500 ft. N of SW cor. J. M. Scott Sur. ..... Drlg. 900 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... T.D. 4,063 ft; sidetracking 3,355 ft.
Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1..... Shut down 2,275 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... Shut down 3,162 ft.
T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 300 ft. out of most northerly cor. of most easterly County School Land Abst. 271 ..... Shut down 1,517 ft.

REFUGIO COUNTY

Blanco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 14, Bonnie View Ranch Subd. ..... Shut down 4,627 ft.
J. C. Dixon's No. 1 Peck, 460 ft. S, 150 ft. E of NW. cor. of S half of Sec. 24, Bonnie View Ranch Subd., Estaban Lopez Sur. ..... Cmtd. 12½-in. csg. 100 ft.; standing.
Humble Oil & Ref. Co.'s No. 2 O'Connor, John Keating Sur., 933 ft. N, 20 deg. E of No. 1 ..... Drlg. 200 ft.

SAN JACINTO COUNTY

E. P. Edwards' No. 1 J. R. Bennett, Cold Springs ..... Shut down 750 ft.

TRINITY COUNTY

Scientific Producers Co.'s No. 1 Thompson, I.&G.N. Sur. No. 47, 50 ft. out of NE cor. of H. K. Thompson 199-acre tract ..... Shut down 1,191 ft.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,258 ft.; cem. 6-in. casing 1,218 ft.; standing.
Allied Pet. Co.'s (Texas Southern Pet. Co.) No. 2 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line ..... Shut down 5,025 ft.

VICTORIA COUNTY

Bunte et al's No. 2 Keeran, Martin DeLeon Sur., 200 ft. E of No. 1 ..... Location.
T. B. Slick Estate's No. 2 McFadd'n, J. Varian Sur., 1,100 ft. NE of SW line and 635 ft. E of railroad ... Location.
The Texas Company's No. 4 McFaddin, 86 deg. E, 1,728½ ft. from NE cor. of Andrew J. Gray Sur. in John M. Rine Sur. ..... Location.

WALKER COUNTY

Hart Oil Co.'s No. 1 Thompson Lbr. Co., Jose Ortega Sur., 1,265 ft. S, 1,876 ft. W of SW cor. of J. B. Gibson's 71-acre tract ..... Shut down for repairs 2,090 ft.

WALLER COUNTY

McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-acre tract ..... No report.

SOUTH LOUISIANA
ASCENSION PARISH

McElroy Pet. Co.'s No. 2 Lacey, 150 ft. S, 150 ft. W of NE cor. of Sec. 29-10s-4e ..... Shut down 4,515 ft.

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w..... Shut down 875 ft.
L. O. Davis' No. 1 Industrial, Sec. 29-9s-10w..... Standing 6,568 ft.
Hill Oil Co.'s No. 1 W. S. Vincent et al, 642 ft. W, 75 ft. N from SE cor., Sec. 25-10s-10w..... Drlg. 400 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w..... Shut down 3,650 ft.
Success Oil Co.'s No. 1 Hewitt, 90 ft. out of SW cor., Sec. 11-9s-11w ..... Rig.

CAMERON PARISH

Brownie-Babbette Oil Co.'s No. 1 R. A. Moore, 562 ft. W, 50 ft. S of NE cor. E half SE of Sec. 18-12s-12w.. Derrick.

EVANGELINE PARISH

Emile LeDeau's No. 1 Vidrine, 260 ft. W and 350 ft. S of NE cor. of Sec. 47-3s-2e ..... Rig.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 27 Lake Peigneur, Sec. 58-12s-5e, midway between Nos. 24 and 25..... Sulphur test.
Jefferson Lake Oil Co.'s No. 28 Lake Peigneur, Sec. 58-12s-5e, 150 ft. W NW of No. 26 and 1,720 ft. SW No. 25 ..... Sulphur test.

IBERVILLE PARISH

Standard Oil Co.'s No. 2 Myrtle Grove-Wilbert, Bayou Choctaw, 2,040 ft. N and 600 ft. W of C of Sec. 52-9s-11e ..... Drlg. 1,120 ft.
Standard Oil Co.'s No. 2 Gay, Bayou Choctaw, 4,500 ft. N and 600 ft. E of SW cor. SE of Sec. 52-9s-11e..... Drlg. 4,405 ft.
Standard Oil Co.'s No. 7 Schwing, Bayou Blue, 1,359 ft. N and 1,856 ft. E of C of Sec. 74-9s-10w..... Drlg. 3,200 ft.

LA FOURCHE PARISH

Pop Oil Co.'s No. 1 Esponge Vizier, Sec. 26-21s-22e, 78 ft. N, 289 ft. E of The Texas Company No. 4 L.L.&E. ..... Drlg. 1,000 ft.
The Texas Company's No. 4 L.L.&E., Leesville, Sec. 26-21s-22e ..... Drlg. 100 ft.

PLAQUEMINES PARISH

Humble Oil & Ref. Co.'s No. 5 Cockrell-Moran, Lake Grand Ecaille, 10,377 ft. N and 2,614 ft. W of NE cor. of Twp. 21s-26e ..... Location.
Humble Oil & Ref. Co.'s No. 7 Cockrell-Moran, Sec. 14-20s-26e, 400 ft. S of No. 4 ..... Cap rock 1,174 ft.; cmtd. 9⅝-in. csg.

POINTE COUPEE PARISH

Grand Bay Oil & Gas Co.'s No. 1 Moniotte, 10,140 ft. S and 13,450 ft. E of NW cor. Twp. 5s-11 in Sec. 34.... Shut down 310 ft.

TERREBONNE PARISH

La. Gas & Fuel Co.'s No. 2 Minor, 3,480 ft. S and 1,980 ft. E of NW cor., Sec. 3-18s-16e ..... Drlg. shale 4,535 ft.
The Texas Company's No. 5 State, Dog Lake, 2,270 ft. S and 450 ft. E of NW cor. of Sec. 5-22s-16e..... Bldg. derrick foundations.
The Texas Company's No. 4 La.L.&E., Bay Junop..... Location.
The Texas Company's No. 10 State, Lake Barre..... Location.
The Texas Company's No. 12 State, Lake Barre..... Location.
The Texas Company's No. 5 State, Lake Pelto, 1,505 ft. N and 1,539 ft. W of SE cor. of Sec. 8-23s-18e..... Cap rock 1,683-94 ft.; cmtd. 9⅝-in. csg. 1,685 ft.; drld. plug and set screen.
The Texas Company's No. 14 State, Lake Barre..... Location.

VERMILLION PARISH

Pure Oil Co.'s No. 2 Alliance Trust Co. Gueydan, 1,875 ft. E and 950 ft. S of NW cor. of Sec. 34-11-1w. Drlg. sand, shale and shell 2,640 ft.

WEST FELICIANA PARISH

Putnam Syndicate's No. 3 Como Plantation, Sec. 51-1s-4w. Shut down 2,449 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 34)

LE FLORE COUNTY

Dowd et al's No. 2 Thomas, SE NE Sec. 16-3-22 ..... S.G. 1,194-1,248 ft.; shot with 30 qts., showing 1,000,000 ft. gas.

LINCOLN COUNTY

Hilton Phillip's No. 1 Phillips, SW NW Sec. 2-14-3..... Rig skidded 50 ft.; spudded.
Mote et al's No. 1 School Land, NW cor. Sec. 36-17-5... S.D. 1,160 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19..... 1,011 ft.; abnd.

OKFUSKEE COUNTY

Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10... S.D. 3,638-90 ft.; Wilcox sand; hole full water.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w ..... S.D. 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ..... S.D. 5,515 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 ..... S.D. 1,950 ft.

PITTSBURG COUNTY

Tape Oil Co.'s No. 1 Fulton, SE Sec. 34-7-14 ..... S.D. 1,200 ft.
J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 ..... Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 ..... Rig.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-34w ..... C.O. 5,150 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ..... Drlg. 3,420 ft.

WASHITA COUNTY

Miley Pet. Co.'s No. 1 Wolfe, NE SW Sec. 23-9-17w.. ... Rig.
Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w ..... Drlg. 2,740 ft.; show oil 2,459-37 ft.; S.D. 2,757 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .... S.D. 1,265 ft.

OKLAHOMA PANHANDLE
TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NE Sec. 11-1-18.. T.D. 4,720 ft.; to cement.

SOUTHERN OKLAHOMA
ATOKA COUNTY

Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 ..... S.D. 1,720 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10.. T.D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... T.D. 740 ft.; plugged back to 450-80 ft.
Whalem et al's No. 1 Mason, NW SE SW Sec. 24-6s-9.... S.D. 845 ft.

CARTER COUNTY

Lundy's No. 1 Spraggins, C NE NW SW Sec. 8-1s-2w.... Drlg. 920 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w..... Location.

LOVE COUNTY

Autry et al's No. 2 Cross, CWL SE NE Sec. 27-6s-2 ..... Show oil and gas 970-72 ft. and 1,324-34 ft.; 1,651 ft., abnd.
Schemerhorn et al's No. 1 Bourland, NE NW SW Sec. 1-6s-1 ..... Drlg. 1,042 ft.

MARSHALL COUNTY

F. H. E. Oil Co.'s No. 1 Beard, NW SE Sec. 3-8s-6..... Rig.
Everett et al's No. 1 Agres, SE NE Sec. 14-7s-6 ..... S.D. 1,170 ft.
Newman et al's No. 1 Henry, NW cor. Sec. 22-7s-6 ..... Rig.

McCURTAIN COUNTY

Prassell et al's No. 1 Wagoner, SE NE Sec. 5-8s-27 ..... Drlg. 160 ft.
Stampfs et al's No. 1 Harris, SW NW SW Sec. 14-9s-25.. Drlg. 2,531 ft.
Stewart's No. 1 Patterson, C SE SE Sec. 7-6s-24 ..... Drlg. 998 ft.

PUSHMATAHA COUNTY

Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-3s-18 ..... Drlg. 590 ft.

STEPHENS COUNTY

Dameron & Brock's No. 1 Dameron, SE SW NE Sec. 11-3s-6w ..... S.D. 308 ft.
Brown's No. 1 Hightower, SW SE NE Sec. 15-3s-5w..... Sand 990-1,004 ft.; S.O.; S.D.
George's No. 1 Ryan, NW SW NE Sec. 31-3-15 ..... S.D. 120 ft.

SUMMARY OF STATEMENTS MADE FEBRUARY 10, 1932, RELATING TO BUSINESS OF VARIOUS PIPE LINES FOR MONTH ENDING JANUARY 31, 1932

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat. Transit	708,300.22	132,346.98	1,168,400.35	546,544.24	693,384.83
S. W. Pa. P. L.	452,222.36	64,388.50	615,388.50	327,706.71	385,410.43
Eureka P. L.	1,218,191.97	264,733.46	350,795.09	266,906.78	340,336.88
Buckeye P. L. (Macksburg)	265,000.88	231,436.17	131,155.73	247,543.60	151,749.99
Buckeye P. L. (Lima)	2,936,849.21	70,902.03	2,480,519.63	1,483,164.35	1,020,318.08
Buckeye P. L. (Cleveland)	38,126.48	12,765.55	164,710.36	1,710.80	182,744.73
Indiana P. L.	520,692.84	2,957.69	1,110,339.07	720,776.96	415,349.67
Cumberland P. L.	64,500.81	.....	.....	.....	.....
Southern P. L.	258,415.23	.....	183,094.32	45,091.84	104,546.28
Bradford Trans.	156,443.22	409,406.66	.....	604,570.61	.....
N. Y. Transit	198,406.61	42,434.50	171,001.99	160,691.41	.....
Northern P. L.	334,194.85	.....	542,961.44	167,659.81	354,994.17
Tide Water Pipe	974,418.35	21,527.15	.....	582,162.04	.....
Tuscarora Dev.	10,920.81	.....	.....	305,988.46	.....
Total Jan. 31	8,136,683.84	1,252,896.69	6,918,366.48	5,460,517.61	3,648,835.12
Total Dec. 31	8,315,308.74	1,377,108.32	7,285,917.75	5,273,564.45	3,580,536.45
Difference	178,624.90	124,211.63	367,551.27	186,953.16	68,298.67

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

	Month of December		12 mos. ending Dec.	
	1930	1931	1930	1931
Petroleum crude ..... Bbls.	1,338,667	1,070,672	23,704,162	25,535,159
Petroleum crude ..... $	1,533,310	950,446	32,153,377	20,827,852
Total refined petroleum ..... Bbls.	3,839,922	5,488,493	122,167,425	91,008,857
Total refined petroleum ..... $	26,657,020	13,366,420	438,194,692	232,293,597
Gasoline, naphtha and other light products ..... Bbls.	4,224,944	2,539,968	63,195,331	43,786,519
	13,727,530	5,897,505	250,646,784	109,301,417
Oils, illuminating ..... Bbls.	1,310,191	640,217	16,689,684	12,534,130
Oils, illuminating ..... $	4,956,537	1,724,127	63,325,252	34,795,880
Gas and fuel ..... Bbls.	2,687,867	1,710,635	32,377,758	26,588,187
Gas and fuel ..... $	2,575,812	1,379,396	33,219,574	23,966,094
Lubricating ..... Bbls.	608,006	539,014	9,752,076	7,994,446
Lubricating ..... $	5,286,865	4,275,998	88,931,071	62,986,230
Other refined petroleum ..... Bbls.	8,914	8,659	152,576	105,575
Other refined petroleum ..... $	110,276	89,394	2,072,911	1,243,976
Paraffin wax ..... Lbs.	27,620,086	38,659,169	292,932,142	290,484,394
Paraffin wax ..... $	851,680	1,040,832	10,479,727	8,424,987

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Read by Oil Men Everywhere

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	1 time	2 times	3 times	4 times
3 lines	1.05	1.80	2.55	3.30
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5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

Compute white space at the above rates.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

FOR SALE—EQUIPMENT

FOR SALE—New Braden Type B-15 heavy duty winch. Suitable for use with truck or tractor as rod and tubing machine. Address Box E-930, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE

GASOLINE PLANT

(Absorption)

Complete in every detail.

Located at Dewey, Okla.

Write

Dewey Portland Cement Co.

Dewey, Okla.

200 AMP. General Electric Arc Welder; portable; 220 V. 3 ph. 60 cy. Complete. Like new. $350. 7x6 Ingersoll-Rand Type ER-1 Air Compressor. Like new. $225. 8x6 Ingersoll-Rand Type ER-1 Air Compressor. Like new. $250. 36"x18' Fifield Screw Cutting Lathe. $650. Also large stock of lathes, shapers, pipe machines, bolt threaders, etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West Second St., Cincinnati, Ohio.

20 Waukesha engines, heavy-duty, 4-cyl., 120 H.P. Cheap.
MERTES MACHINERY CO.
1622 S. First St., Milwaukee, Wis.

30,000 ft. of 2-inch, 1,800 lb. test at .06 per foot. 10,000 ft. of 8¼-inch 24x28 lb. test at .45 per foot. This pipe in A-1 condition. Prices f.o.b. Tulsa. Write Box E-960, The Oil and Gas Journal, Tulsa, Okla.

INCORPORATIONS

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER, ALLWINE & ROMMEL
Suite 418-815, 15th St., N.W.,
Washington, D. C.

BUSINESS OPPORTUNITIES

INVESTORS, experienced oil men and geologists are drilling geological structures in Texas. Require $25,000 additional capital. If in a position to invest $250, get details our startling offer. Money secured, A 1 references. Investigate as you never had opportunity to equal it. Address Box E-953, The Oil and Gas Journal, Tulsa, Okla.

EXCEPTIONAL opportunity for experienced oil man or royalty specialist with dependable connections to join investment broker opening eastern offices for sale of royalties. Partnership or profit-sharing basis. Give full particulars. Address Box E-952, The Oil and Gas Journal, Tulsa, Okla.

EASTERN broker with select clientele is in the market for good producing royalties. Opportunity for permanent connections if prices are right. Address Box E-951, The Oil and Gas Journal, Tulsa, Okla.

WITH $10,000 CAPITAL — Believe can make a profit of $100,000 in six months' time trading in commodities. Time is here now. Years of experience. GREGG SNYDER, 25 Broadway, New York.

I KNOW OF the best oil prospect in Texas, it is a secret. Write to George Austin, 1010 West 15th, Emporia, Kans.

OWN 17,000-acre blk. royalties in S. E. Colorado. Approved geology. O. & G. development lease considered from responsible parties. Address 2644 Rimpau Blvd., Los Angeles, Calif.

FOR SALE, Mr. Driller—5,000 acres in Oklahoma. Best geology. Attractive chance for drilling. Quick action. E. A. Hoff, 4819 Jarboe, Kansas City, Mo.

WANTED—Small producing oil lease with pumping equipment; must be located in Texas. Route 1, Box 12, Megargel, Tex.

WILL SELL ½ of working interest Large Wilcox sand well Okla. City for $60,000. Address Box 489, Shawnee, Okla.

OIL located before drilling. Geophysical method. Torgodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

IF YOU WANT oil and gas leases in blocks or less in Marion or Cass Counties, Texas, communicate with G. W. Brown, Jefferson, Texas.

WANTED—Seismic shot holes, shallow production or core drilling contracts, Ritter-Dugan Drilling Co., Perry, Okla.

$8.00 BUYS Deed, part oil, 10 acres, Oklahoma County—MANY WELLS NOW DRILLING, Joe Milam, Dept. 43, Oklahoma City, Oklahoma.

MONEY RAISING

JAMES E. MILLER CO. will co-operate with responsible firms or parties seeking aid in financing projects of higher order. 207½ East Third Street, Tulsa, Okla.

DO YOU NEED MONEY for organising or financing oil or mining deals? Write 2443 N. W. 12th, Oklahoma City.

JOHN MORRIS, 3608 WARREN ST., PHILADELPHIA, Pa., invites full facts first letter from capable parties planning negotiation of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

CAPITAL: An exp. dependable broker will aid in financing projects of merit. Amster Leonard, East Orange, N. J.

MONEY RAISING
Inquiries solicited from corporations interested in raising capital through marketing corporate securities.
THE BROOKWORTH CO., INC.,
110 East 42d St., New York.

MAILING LISTS

LIVE MAILNG LISTS
Stockholders' lists of Elliott, Joiner and others in oil royalties, leases and mining. Flory, Worth Bldg., Fort Worth.

SITUATIONS WANTED

ENGINEER—pipe line-production-distribution-inventory appraisal-abstracting, anywhere. Write Box E-920, The Oil and Gas Journal, Tulsa, Okla.

Practically experienced in Rotary and Cable drilling and fishing. Meritable sales record in field last 5 years. Now employed. Albert Woods, 524 E. 7th, Oklahoma City. References exchanged.

ENGINEER, technically trained with practical experience in the erection and operation of Solid CO-2 Plants. Now employed as Assistant Superintendent, making an enviable record for increasing production and lowering costs. For further advancement a new connection is necessary. Address Box E-962, The Oil and Gas Journal, Tulsa, Okla.

DESIGNING DRAFTSMAN power plant, 12 years. Ref. Exp., general engineering in concrete and steel design. Address Box E-961, The Oil and Gas Journal, Tulsa, Okla.

MORE THAN 12 years experience in the Natural Gasoline and Refinery business doing construction work, operation of plants, gas testing, fractional analysis and office work. A college graduate. R. B. Whitton, Timpson, Texas.

HELP WANTED

MANUFACTURER of heavy machinery wants thoroughly experienced pump sales representatives with actual selling experience in either New York, Mid-Continent, Chicago or California areas. Give full details of education, experience, references and enclose a small photograph. Address Box E-941, The Oil and Gas Journal, Tulsa, Okla.

PIPELINERS, Welders, Mechanics, Operators, Carpenters, Bricklayers and other tradesmen send stamped envelope for interesting information regarding employment. P. O. Box 1523, San Antonio, Texas.

FOR SALE

FUEL OIL, crude oil, gasoline, distillate, tank car lots, shipped to any point. Get our prices. East Texas Fuel Oil Co., 208 Isham Bldg., Longview, Texas.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla

RANCHES AND FARM LANDS

RANCH land in Texas and New Mexico, 40 acres to 400,000 acres, improved or unimproved, $2 per acre up; cash, terms or trade for business property, stocks or bonds. Amos Poe, Andrews Building, Dallas, Tex.

ROYALTIES—PRODUCTION

JAMES B. McANALLY

Speculative and Investment Royalties

Hunt Building, Tulsa, Okla.

Service to dealers, Oklahoma, Kansas and East Texas.

UNUSUAL OPPORTUNITIES FOR ROYALTY INVESTORS AND DISTRIBUTORS

THE MERCURY COMPANY
Philtower Building, Tulsa, Oklahoma

ROYALTY OWNERS—I have CASH for producing royalties in Oklahoma City area. Submit full particulars and price. F. S. Calkins, 417 Security Title Insurance Bldg., Los Angeles, California.

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THE OIL AND GAS JOURNAL

TULSA OKLAHOMA

ROYALTIES PRODUCTION

Kansas Royalties offsetting Midwest well, Stafford County. Hugoton Gas Royalties. Lists, maps free. Harry Haynes, Grantville, Kans.

OKLAHOMA producing royalties specializing in Oklahoma City Field.
Chester Imes
Petroleum Bldg. Oklahoma City

ROYALTIES on top Major Company core drilled structures. Ellsworth-Barton Arch area. Western Kansas. Write W. C. Hallam, 802 Patterson Bldg., Denver, Colo.

PRODUCING ROYALTIES
Specializing in East Texas
John L. Dickson, Box 1037, Tulsa, Okla.

For INCOME AND SPECULATIVE Oil Royalties for Investment, write
SPENCER ROYALTIES CO.
Thompson Bldg., Tulsa, Okla.

ROYALTIES in the territory of coming big development in Kansas, Stafford, Barton, Ellsworth, Kingman and Stevens Counties, core drilled. Also producing royalties. Special service to brokers. Send for list. James R. Haynes, Grantville, Kans.

LEASES—PRODUCTION

LAND, the source of all wealth, the only safe investment, all royalty—on structure—new survey adjoining location—oil fields—Oklahoma County—best geology—three 40-acre tracts—one 40 sells in $100 shares. Geo. W. Seckman, Edmond Okla.

TEXAS PANHANDLE Gas Production and Royalties is my Hobby—get my prices. Wire or write. E. B. Reeves. Box 13, Alanreed, Gray County, Texas.

LEASES—Barton Ellsworth Arch territory in Stafford County, Kansas. Write today. James R. Haynes, Grantville, Kansas.

FOR SALE—Shallow partly developed Oil and Gas Leases. Plenty of acreage, pipe lines all in. Good market will give option. Satisfy yourself. Address Box E-935, The Oil and Gas Journal, Tulsa, Okla.

FOR LEASE—1,206 acres, Bee County, 13 miles southwest from Pettus, 5 miles west Simms big gasser. Want $1 rental. Lacks & Knight, San Antonio, Tex.

WINKLER County, leases and royalties bought and sold, both producing and wildcat. G. C. Dawson, Kermit, Tex. Box 21.

W ½ NW ¼, 19-7N-58, Weld Co., Colorado. Near New Raymer. Will sell land subject oil lease or part or all landowners' royalty. Associated Stockholders, Inc., Linden Hills, Minneapolis, Minn.

SOUTHWEST TEXAS FIELDS

(Continued from Page 40)

Atlantic Oil Producing Co. in San Patricio County in the new Aransas Pool a little northeast of Sinton. The company will mud off the gas in the Welder Oil Corp.'s No. 3 Welder, now at 3,689 feet, and will deepen it to 6,000 feet and in addition will drill another test in that neighborhood. Atlantic has a big block of acreage adjoining the acreage of the Welder Oil Corp.

The Aransas Pool at present consists of three gas wells, producing at about the depth of the No. 3 Welder, and one dry hole on the southwest of the three producers and about 1,500 feet away.

Starr County Pool

The new Los Olmos Pool in Starr County, 8 miles north of Rio Grande City, now consists of nine oil wells and four gas wells, all at around 400 feet total depth, and four tests drilling. Two of the gas wells are supplying the city of Rio Grande and Fort Ringgold nearby. The oil is being hauled by truck to the new refinery at Harlingen. There seems to be more inquiries concerning this field than most anything in Southwest Texas at this time. The wells are all young but are said on reliable authority to be making around 250 bbls. a day for the nine wells. Thus far the field has not covered much acreage and whether it spreads out much remains for drilling to prove. The operators, all independents, seem to be very well satisfied and are in hopes of making arrangements for a refinery at Rio Grande City. Some of the wells since being on the pump have actually increased in production. The oil is about identical with the typical Mirando crude oil.

Frank Bennett of Houston made arrangements to use the natural gas line from the field to Rio Grande City during the night hours for running the oil to a loading rack at Rio Grande City but has not yet started to do so. It will be necessary first to install a separator to separate what oils remains in the line from the gas when the line is used for gas during the day. Bennett is also to drill 100 wells on the 1,200 acres he bought, and plans to ship the oil to Aransas Pass and deliver it to the Atlantic Oil Producing Co.

The wells are being drilled with light rigs and some of the pumping equipment is crude but they are getting the oil.

Saxet Field

In the Saxet Field in Nueces County, Houston Oil Co. set surface casing at 504 feet in its No. 1 McGregor, about a mile north of nearest production in the Saxet Field, and from here on will be making hole. The nearest producer is the Gulf Coast Oil Co.'s No. 1 Maggie Harrell at 4,550 feet, a gas-oil well. It was first completed at 4,087 feet for 158 bbls. initial production, then deepened to 5,225 feet and plugged back to 4,553 feet, where it is now on production and has made around 300 bbls. daily and increasing.

Miscellaneous

Carpenter and others' No. 1 Wolf in Section 8, in southeastern Zavala County, had a gas blowout at 767 feet and is setting casing to make a test.

There seems to be some doubt whether the deal of the Big Lake Oil Co. to drill two deep tests on St. Joseph Island off the coast at Aransas Pass will go through.

F. H. Eckert's No. 1 Edwards heirs, southeast of San Antonio, at 1,473 feet topped the chalk with an elevation of 573 feet. Only a few tests have gone to the Edwards lime in that part of the county and the Eckert tests, which is scheduled for an Edwards lime test, is therefore interesting. Comparisons are with tests at some distance from it but some estimates give the Eckert test a chance of being about 85 feet high on the chalk.

Kistler, Stivers & Hendrix are rigging up to drill the No. 1 D. Carter in Caldwell County, in the Isaac Allen Survey, for a shallow test, expecting to encounter a Serpentine plug. It is located about 2½ miles southwest of the Lytton Springs townsite, where there are a few wells producing from Serpentine, and about 2 miles northwest of the Lytton Springs Pool, which is producing from Serpentine and which has been one of the most profitable shallow pools in Texas.

Efforts are going on all along the Balcones from Caldwell County north to find Serpentine pools in eastern Travis and eastern Williamson Counties and western Bastrop. The only test at this time in western Bastrop is E. R. Marts' No. 2 Bahn, which after starting drilling has been delayed by boiler repairs.

There is expectation that around northeastern Caldwell, around the Dale, Lytton Springs and Lytton Springs Townsite Pools, there will be a number of these tests during the year.

Escobas Field

S.R.C. Oil Co.'s No. 6-D Montemayor in Escobas came in at 1,471 feet in the northwest corner of Block 10, Survey 64, flowing at the rate of 1,500 bbls. a day and then went to salt water. It is a south offset to the Daniels & Hill No. 1 Montemayor, which came in for about the same amount and is still making it. It is thought the bailer pounded through the cap rock in the S.R.C. well and the bottom of the hole is being cemented off. The company is also starting the No. 7-D Montemayor, a west offset to the No. 6-D Montemayor.

If S.R.C. is abole to bring back the No. 6-D Montemayor as a big producer it will start something in that field and a lot of the tests in the upper sand at around 1,300 feet may be deepened. There is at least sure to be some additional drilling. The Daniels & Hill No. 1 Montemayor in the southwest corner of Block 7, Survey 64, gauged 864 bbls. in 12 hours.

In Jim Wells County

Magnolia Petroleum Co.'s No. 1 Seeligson in the southern part of Jim Wells County after testing salt water and a little oil in sand topped at 3,414 feet has deepened to 3,505 feet and passed through 37 feet of sand from 3,414-51 feet and at one time had 100 feet of oil in the hole.

It is on a block of acreage secured by Vacuum Oil Co. and came into the hands of the Magnolia on the merger of Vacuum and Standard of New York. It is pure wildcat being 50 miles from nearest important production in any direction. Houston Oil Co. has a little oil and gas in two wells in northwestern Brooks County, 20 miles southwest, and Stanolind Oil & Gas Co. has a small gas well in southwestern Nueces County, 20 miles northeast.

Magnolia's No. 1 Seeligson has some earmarks of being an edge well and after deepening a little further another location is likely to be made.

LEGAL

IN THE COUNTY COURT OF TULSA COUNTY, OKLAHOMA

In the Matter of the Estate of Arthur A. Beard, Deceased—Probate No. 8754.

NOTICE OF SALE OF PERSONAL PROPERTY

NOTICE is hereby given that, in pursuance of an order of the County Court, County of Tulsa, State of Oklahoma, made on the 8th day of February, 1932, in the matter of the estate of Arthur A. Beard, deceased, the undersigned as executrix of the estate of said deceased, will sell at public auction to the highest bidder, subject to confirmation by said County Court, on the 24th day of February, 1932, at 10:00 o'clock a.m. at the west door of said courthouse in said County of Tulsa, all the right, title and interest and estate of said deceased at the time of his death, and all the right, title and interest that the said estate, has by operation of law, or otherwise acquired in and to the following personal property, to-wit:

1,782⅛ shares of stock in Haskell, McCrary, Beard, Inc., a Delaware Corporation;	
3,278 shares of stock in Arthur A. Beard, Inc., a Delaware Corporation;	
1,623 shares of stock in Beard & Hammond, Inc., a Delaware Corporation;	
3,003 shares of stock in Boska Mining Company, a corporation;	
One-seventh interest in the partnership of Beard and Elliott;	
Unknown interest in Montana Ranch Club;	
Unknown interest in Dewey Friction Wheel Co.;	
Unknown interest in A. H. Pettigrove Dl'g Co.;	
Oakhurst Country Club Membership and Bond;	
Tulsa Club Bond in the sum of.	$500.00
One note, dated 2-10-30, Earl Beard, due 2-10-31, 6 per cent.	11,376.43
Open account, C. E. Beard	5,433.03
Open account, H. V. Carter	658.68
Open account, Beard and Elliott	10.00
Open account, W. S. Camblin Estate	754.75
Open account, J. W. Jones	65.00
Open account, M. M. Waite	2,338.28
Open account, Paul Galbraith	58.00
Open account, Pierce Layman ..	818.60
Open account, C. D. Beard	201.33

Said sale to be approved by the County Court.

Dated this 8th day of February, 1932.

MYRTLE E. ELLIOTT, nee Beard.
Executrix.

EASTERN FIELDS

(Continued from Page 47)

the Woodyal Gas Co. is down 2,150 feet in a second test on the Charlie Honaker farm. In Jefferson district the Cambridge Gas Co. reached 1,765 feet in a second test on the A. M. Mullens farm and then started a fishing job. In the same district the United Fuel Gas Co. is down 2,150 feet in No. 8 on the Courtney Land Co. lease. In Carroll district the Kanawha Gas & Utilities Co. has made a location for No. 3 on the W. W. Carroll farm.

Mingo County is less active with but two wells drilling. In Warfield district the United Fuel Gas Co. is better than half way in its No. 4,329 on the Central Trust Co. tract which has now reached 2,275 feet. In Hardee district the same company is drilling at 3,980 feet in its No. 4,331 on the Cotiga Development Co. lease and will soon be in the sand.

Wetzel County is all but shut down. There are three rigs standing but work has not yet started. In Church district the Manufacturers Light & Heat Co. built a rig to drill its No. 1,572 on the D. W. Stewart farm to deeper sand and in Clay district the same company has a rig standing for the same purpose on the W. P. Hubbard farm, No. 3,300. In Proctor district, Ray Hennen and others have a rig standing on the Jesse Parson farm.

There is some activity in Boone County and a better forecast for that section. In Scott district the Cambridge Gas Co. reached 1,200 feet in a second test on the C. C. Lewis heirs farm and developed a fishing job. In the same district the Owens Bottle Co. is ready with rig and tools for a second test on the S. M. Wheeler farm and also has rigged up for No. 21 on the Cassingham and others' lease. In Washington district, C. P. Young has spudded in and started drilling a second test on the J. Albert Covert farm, and on the same farm the Hill Gas Co. is down 400 feet in its second attempt. In the same district the Owens Bottle Co. is ready with rig and tools for No. 13 on the Little Coal Lands Co. tract. In Sherman district the Pure Oil Co. has reached 1,830 feet in its No. 56 on the Federal Coal Co. tract. This company has a rig standing for No. 256 on the Williams Coal Co. lease and has made a location for No. 42 on the La-Follette, Robson and Pritchard lease, both in Sherman district. In this district Godfrey L. Cabot is down 2,652 feet in a second test on the Central Trust Co. lease and is at present shutting off water. The same operator has a rig standing for No. 46 on his lease of the Federal Coal Co. tract. In this district the Owens Bottle Co. has a rig standing for No. 20 on the Peytonia Coal Land Co. tract and has the rig and tools ready to start No. 21 on the same lease.

Reviewing Kanawha County there are few signs of activity in that district but operators are ready as soon as a better market is presented. In Cabin Creek district the Pure Oil Co. is ready with the rig and tools for No. 254 on the Williams Coal Co. land, and has the materials on the ground for No. 255. In the same district the Cannelton Coal Co. has made three locations on its own property, Nos. 15, 16 and 17. Godfrey L. Cabot is ready with a road for No. 19 on the Quincy Coal Co. lease. The Winifrede Co. has made a location for No. 19 on the Bedford Trust lease, and also for a test on the G. W. Wentz farm, both in Cabin Creek district. In Elk district the Kendall Oil & Gas Co. is ready with a location for No. 5 on the Frank J. Kendall farm. Here Grosscup and others are shut down at 4,758 feet in a test on the Samuel M. Burdette farm. In Union district, Ellyson and Wilson reached 1,710 feet in a test on the Virgil C. Tate farm and shut down.

In Roane County the deep test of the United Fuel Gas Co. on the J. W. Hinzman farm in Curtis district remains shut down at 9,100 feet. The rig is now being repaired after a damaging fire. In Jackson County, G. G. Griffin and others have spudded in and started drilling on the D. E. Cole farm in Ravenswood district. In Lewis County the Southern Oil Co. is drilling at 1,300 feet in No. 5 on the E. C. Butcher farm in Court House district. In Wood County, Charles Smith is drilling a test on the William H. Compton farm in Union district and is at 510 feet.

SOUTHWEST PENNSYLVANIA

There was again but one completion in Southwest Pennsylvania for a week's work, and that was a small oil producer. In Richland Township, Allegheny County, a local group drilled a test well on the W. M. Martin farm to a depth of 1,610 feet, the Hundred Foot sand. It will make a small pumper and started off at 3 bbls. a day. Near Sewickley, the Swain Oil Co. is past 900 feet on the A. L. Burg farm, Allegheny County. In Pine Township, Leidecker and Gosser & Co. are drilling a second test on the P. Shenot Lease No. 1 and are past 850 feet.

CENTRAL WEST FIELDS

(Continued from Page 47)

test on the Union Investment Co.'s land, NE Section 9, Busseron Township, is reported dry.

In Floyd County, Brooks J. Johnston drilled a dry hole on the James A. Sharp farm, NW Section 30, Georgetown Township.

Dubois Oil & Gas Co. is drilling on the Anton Hopf farm, SE Section 7, Madison Township, Dubois County.

KENTUCKY

An unusually good oil producer was found in the Owensboro Field, of Daviess County, Kentucky, by Mida McMahon in No. 2 on the Robert Jones farm, in the Jones Pool, which had an initial of 175 bbls. from a depth of 622 feet. Brenner & Adams' test on the A. Jackson farm, in the Cane Run Pool, same county, produced 20 bbls. from 612 feet. S. H. Russell and others' No. 1 J. F. Bruner farm, to the east of Whitesville, was dry at 800 feet.

In Ohio County, in the Friendship Pool, Porter, Burgess and others' second test on the Frank Hanna farm, came in a duster.

In Hancock County, in the Pellville Field, the Sand Petroleum, Inc., drilled a test on the Eulus Bolling farm, which proved a light gas producer. Unknown parties are drilling No. 1 on the Ollie Bolling 90 acres, and the Ivyton Oil & Gas Co. drilled in a dry hole in No. 1 on the John Smith farm, same county.

Daviess County's oil production for December totaled 55,019.49 bbls., according to the report filed by John Lewis of the State Tax Commissioner's office. The Ohio Oil Co., through the Illinois Pipe Line Co., handled 34,465.65 bbls.; for which the operators received $31,002.02. The Producers Pipe Line Co. handled 20,553.81 bbls. and paid out $18,498.43 for the product. The price paid was at the rate of 90 cents a barrel. The state received $247.59.

Total runs made from wells served by the Illinois Pipe Line Co. in western Kentucky during January were 115,410.40 bbls.

ISSUE NEW MAP

The Zingery Oil Map Co. of Fort Worth, in conjunction with the Texas Blueprint Co. of Waco, has issued a new ownership map on the Satin area along the line of Falls and McLennan Counties, in the new Curtis discovery area in northern Falls County.

The map shows landowners, lease owners and the extent of previous development in a district 10 miles wide east and west, and 20 miles north and south. Scale is 1,000 varas to the inch.

Refining Expansion in Chicago Area

Modernization of Several Plants Reported Planned. Tank Wagon Structure Firm. Diesel Market Gaining Ground

By Robert C. Conine
Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, Feb. 15.—Trends are becoming discernible in this district which may mark the inception of important departures from past policies in the oil industry. These developments, it is learned from a variety of reliable sources, include the building of complete refineries by major companies, the installation of extensive facilities for the production of 70 octane gasoline, the expansion of markets for engine fuel oils and distillates, extension of pipe lines, installation of equipment to produce special naphtha cuts, installations to supply all electrical requirements of refineries, withdrawal of several refiners as sellers of fuel oils. These are not mere rumors, but proceed from authoritative informants who are not at this time prepared to announce their plans more fully, if at all. It now appears certain that before the spring buying season opens one major refiner will announce his plans to build a new refinery not far from this district, and it is equally assured that at about the same time it will be revealed that at least one of the larger operators has doubled the cracking capacity of his Chicago district refinery.

Better Feeling Evident

With these developments in the air manifesting strength and confidence in the oil industry, and with the heightened spirit prevailing generally as the result of recent activities in connection with crude oil production, the oil trade, in spite of unimpressive market conditions, is probably in the best position to appreciate the current wave of optimism which is resulting from the Federal Government's financial movements, and the news that industrials are beginning to put men back to work in lots ranging from 3,500 to 30,000. This means the reopening of numerous outlets for petroleum products.

Keen Competition in Fuels

With the factories returning to a strong buying position, it may be expected that sellers of utilizable engine and boiler heat fuels, who are reporting a decline of as much as 40 per cent in this business this season as compared with that even of last year, will face strong arguments to quote prices little better, if any, than those current. The industrials are taking advantage of every means offered to keep down their costs, and as an example one may point to one manufacturer who is burning crude oil under his boilers at the rate of 6,000 bbls. a month because the crude is available from a pipe line and the saving in freight more than makes up for the lower cost of a suitable fuel oil.

Diesels Gaining Ground

A market which has apparently been overlooked for sometime is coming into its own. This is for materials which may be used in Diesel engines. These engines have become extremely flexible in operation and a wider range of suitable fuels may be used. One Diesel engine manufactured in Indiana operates successfully on an 18° gravity fuel oil. Salesmen of these fuels, according to refiners and distributors, are able to show prospective buyers that they can greatly reduce their fuel costs by switching over to Diesel engines. Their arguments are apparently convincing as it is reported that lake and river barges, loading and hoisting apparatus, and in a smaller degree factory power plants, are switching over to oil fuel engines.

Octane Price Basis

As pointed out in these columns last week, buyers and sellers in numerous instances disagree with certain published price differentials in the three octane ranges. The latest development comes from a Texas refiner who announces that in the future he will ignore the quotations published daily when he makes his prices, which will cover a period not exceeding 15 days, but in the event of a change in the published prices similar adjustments will be made in his own quotations. That is to say that if the published price on middle octane gasoline is 3½ cents and his own estimate calls for a price of 3¼ cents (which it does), a change in price in the published figure from 3½ to 3⅝ cents, will boost his own price from 3¼ to 3⅜ cents. Price declines will be handled in the same way.

It will probably be some time before a definite price differential among the low, middle and high octane ranges will be generally recognized and accepted, if one observer views current conditions rightly, but it is already apparent that "just any kind of antiknock gasoline" will not find a ready market. It will cost money to produce the cracked gasoline which will sell, and a material which is not fully treated to eliminate trouble from pseudo gum, odor and color will prove a costly experiment to the refiner who is operating in such a way as to permit him to undersell his competitors. Some of this antiknock gasoline is on the market now and is selling at the price of U. S. Motor gasoline of no octane specifications. "Antiknock" gasoline of 60 octane number and lower is likewise failing to obtain the antiknock premium, although it does sell where there is not the slightest interest in the low octane material. There is comparatively little antiknock material of any description available, and little excuse for selling it as if it were distress material because it is not closer to the higher numbers in the middle octane range.

70 Octane for Regular Grades

At present there are three major companies marketing gasoline in Chicago which closely approaches the 70 octane ratnig predicted months ago. They have not reached 70, but in other territories where 70 octane gasoline figured as the regular grade last summer the antiknock rating has dropped slightly because of seasonal considerations. Only one company in the district, among those handling three grades, has a regular gasoline rating as low as 60 octane numer; several offer a 65 octane gasoline. This spring, however, when 78 octane number gasoline will be the premium grade and the new automobile engines will begin to give the motor fuels a real test, according to leading refinery technologists, practically all of the refiners will find themselves obliged to market higher antiknock gasolines at their regular pumps. Road tests made on a number of the 1932 automobiles, according to engineers, show a great variation in susceptibility to engine knock, even among cars of the same manufacture. These variations amount to as much as 8 or 10 octane number in the fuels that will cause knocking at various speeds. Whether the automobile owner will heap blame on the car manufacturer or upon the gasoline refiner is an interesting questino, but meanwhile, the refiner who provides a satisfactory fuel for the high compression engines will get the business and the boosting that a delighted customer who has had several disappointments always gives.

The little information now available on closely guarded plans points to beginnings of a period of extensive refinery expansion and modernization. These improvements include not only the installation of vapor recovery plants, rerunning units and other accompaniments of increased cracking operations, but also the discarding of older types of cracking apparatus and the installation of completely modern units.

Tank Wagon Structure Firm

In spite of considerable price sniping from various quarters, the gasoline tank wagon markets throughout the territory are considered firm. With the exception of a few points, prices on the regular grade have been "normalized," and price cutting on the third grade is becoming less frequent. One of the major companies which refused to adopt the third grade at its fully controlled stations, is now putting in the third grade at all points where competition has forced it to reduce the price of its regular grade. One of the larger marketers says that there is less possibility of a reduction in the tank wagon postings in the territory now than there has been in months. However, this is in connection with the regular grade of gasoline. With the refiners busily building up their stocks of straightrun gasoline of low octane rating, it would not be difficult to explain a greater readiness on their part to meet price cutting competition promptly.

At the principal points in the territory price changes on the third grade tank wagon and service station postings since January 6, when there was a tenth of a cent general advance to absorb increased freight charges, have been as follows: Evansville, Ind., service station cut .1 cent, January 13; Grand Rapids, Mich., tank wagon cut 1 cent, January 19, service station cut .5 cent, February 4; Green Bay, Mich., service station cut .9 cent, January 29, service station reduced 1.8 cents, February 4; Huron, S. Dak., service station cut .9 cent, January 19; Joliet, service station cut 1.5 cents, January 26; Mankato, tank wagon cut .9 cent, February 6; Milwaukee, service station cut .6 cent, January 28; Saginaw, service station cut .1 cent, January 9; Sioux City, service station cut 1 cent, January 12. The number of less important points in the territory where these prices have been reduced since the first of the year number close to 300, according to one competent observer.

Premiums Losing Vogue

There are growing indications that the service station operators who sought to build up their gallonage by giving away trinkets, household goods and groceries are finding that their inducements are losing appeal. As one marketer explains the waning popularity of the "premium game," the gifts of dime-store goods speedily lose their value as means of establishing a trade of regular customers. Of course the premium station operator can change his stock of gifts repeatedly, but it is not likely that many customers will clutter up their house with all kinds of bric-a-brac because it is free. The alternative, it appears, is to run a grocery store in connection with the gasoline business, and the neighborhood grocers who are still in business have expressed themselves on this possibility. This development is likely to bring a return of price cutting in Chicago, where the price of the third grade, tax included, is 12.5 cents. Co-operative buying in tank car lots on the part of the smaller retailers is reported to be on the increase, as is also the production of blended motor fuel. While it is still possible to evade payment of the gasoline tax, and thus gain a 3-cent advantage over competitors, recent developments in this connection are discouraging to the prospective tax evader. The first of what is reported to be a long list of successful prosecutions against gasoline bootleggers was concluded last week with a conviction that carries a possible penalty of nine years in jail and a fine of $8,000. Among the major companies strange happenings are not uncommon; for instance, one has just completed a $15,000 gasoline and lubricating oil palace on the outskirts of Elgin and on a little traveled road.

Gauging Gasoline Tank Car Markets

Numerous factors are contributing to the present difficulties met in attempting to ascertain ruling prices in gasolines. While the weather has for the most part been adverse to favorable gasoline consumption, the cold, murky days alternate with warm and bright days which are reminders that preparations are in order for the season of increased demand. Refiners are reported to be running large quantities of antiknock grade gasoline into storage, while the accumulating straightrun in the 437 and 400 endpoints is recognized as a possible source of trouble. Two more refiners have reported, since similar announcements in these columns last week, that they are preparing to crack all of the fuel oil from their straightrun operations when their contracts on distillates and fuel oils expire, and will sell only gasoline, kerosene and extremely low gravity fuel oil. The heavier fuel oils, it may be said here, are winning favor of the railroads which formerly specified lighter materials.

Gasoline Tank Car Prices

This week's gasoline tank car prices show a belated sympathetic downward movement of higher test gasolines in response to the decline last week in the U. S. Motor material of low octane rating. The latter gasoline, while not considered firm, is unchanged in price. One major refiner, whose pipe line facilities give him greater leeway, is offering a 64-66 gravity gasoline at a southern Illinois point at 2.95 cents, basis Group 3. This is nearly a cent below the low quoted in Chicago district. Resellers, it is reported, do not find prices in the field reflecting a basically weaker market structure. It is the feeling in oil trade circles here that the slightest indication on the part of refiners that they will curtail crude runs to stills and allow their stocks to work down somewhat will serve to put the markets in a good position at the opening of the gasoline buying season.

While U. S. Motor was unchanged Monday at 2¾ to 3 cents, the 60-62 400 endpoint gasoline moved down an eighth of a cent to 3 and 3¼ cents. The 64-66 375 endpoint gasoline and the 68-70 360 endpoint material likewise declined an eighth of a cent, making new ranges of 3⅝ to 3⅞ cents, and 4 to 4¼ cents, respectively. The fighting grade aviation gasoline dropped a quarter of a cent to a new range of 4½ to 5 cents.

Naphtha Tank Car Prices

The naphtha tank car markets are practically unchanged this week, although business continues to increase and sellers are nearing seasonal improvement in all the products. Some interest attaches to tank wagon activities but here developments are considered of minor importance. It appears that a number of jobbers have seen an opportunity to add to their revenue by co-operative buying of special naphthas, namely cleaners and V.M.&P., in tank car lots and selling directly to the consumer. On paper the margin for the jobber amounted to at least 7 cents a gallon, but in practice it has been discovered that competitors also have nice margins, that handling

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Lub Demand on East Coast Improves

Compounders Buying in Anticipation of Early Motoring Season. Gasoline, Quiet and Steady. Kerosene, Weak. Export Markets Dull

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Feb. 15. — Improving demand for lub oils was the outstanding feature of an otherwise listless market for refined products in the East Coast area, and the market went through the week without any price changes of outstanding importance.

Compounders have come into the market for cylinder and other lubricating oils in better volume, and inquiries received indicated considerable additional buying is on the way. The pronounced open winter which the East has experienced has led to a more sustained demand for automobile lub oils than the trade anticipated, and consequently a number of sellers have found the quantities of lub oil which they purchased for their winter's requirements are now insufficient. In addition to this replacement buying for immediate requirements, buyers in a number of instances are now inclined to come into the market for lub oil for later needs, being influenced both by the belief that an early spring and summer is in sight, and the current relatively low price levels.

Notwithstanding the increased gallonage in lub oils, refiners have not advanced their quotations, and it is believed they are seizing the present situation to firmly establish their market, which has been considerably upset during recent weeks, on a firm trading basis. A continuance of demand at this week's levels, it is believed, will result in the cleaning up of all of the low-priced lubs which have been weighting the market for the past month or so. Such a development, in conjunction with the current restricted lub oil output of eastern refineries, would be most constructive from the price standpoint.

Retail lub oil markets continue affected by the offerings of comparatively obscure brands at low prices. Chain stores and department stores are featuring lubricating oils to an extent hitherto unapproached. An example of the latter is the featuring by the John Wanamaker department store of lubricating oil in 5-gallon tins and in barrels at extremely low prices when contrasted with the current service station prices of the major factors. A continuance of this type of marketing, it is felt, will react seriously against the gallonage of leading marketers who are maintaining their retail prices at 25 to 30 cents per quart.

Mild weather again had its effect upon the gasoline market throughout the East and this, in connection with the general observance of February 12 as a holiday, resulted in an upturn in the sales curve.

Refinery Gasoline

There was an increase in movement in the tank car market both on the higher antiknock ratings and the lower grades, and quotations were well maintained.

The question as to the premium on gasoline of 65 octane number and higher is still unsettled, and refiners continue to quote U. S. Motor in the higher antiknock range at 6 to 6½ cents with the majority of sellers quoting the higher figure. Jobbers are becoming increasingly "octane conscious," and, while the same cannot be said of the general motoring public, there is nevertheless a definite sentiment in favor of the higher antiknock motor fuel in the making, and leading refiners are making their plans accordingly.

For gasoline under 65 octane number, 5¾ cents in tank car lots at bulk terminals is quoted in the local market, with some business still going through at one-quarter cent under this level. The amount of the cut-price gasoline is not as plentiful as it has been during recent weeks, but it is indicated that with the arrival of warm weather and a more stable market for the lower grades of gasoline, a plentiful supply of the cheaper fuel will be available.

In connection with the changing trends in gasoline manufacture, it is felt that refiners unable financially or for other reasons to re-equip their plants to produce gasoline of 65 octane number or higher will be forced more and more to seek so-called "third-grade" outlets for their production. With automobile manufacturers veering more and more toward high compression engines, unsuitable for low-grade gasoline, it is a question as to just how long it will be before the market for the third-grade product "dries up."

Tank Wagon Gasoline

There were no general revisions in the gasoline tank wagon situation, and marketers reported the price-cutting situation continued without substantial change.

Gallonage was well maintained, on the whole, with holiday demand and mild weather making for sharp increase of sales in some parts of the territory. It is noted in connection with the warm weather that demand has centered to a considerable extent on the so-called "ordinary" grades of gasoline, to the detriment of the premium grades.

As indicated by earlier reports from Albany, it now appears New York State is slated for a 3-cent gasoline tax, instead of the 4-cent rate advocated by the governor, the senate this week passing the tax bill raising the gasoline tax rate from 2 to 3 cents. Although final enactment in its present form is believed a virtual certainty, the group of petroleum interests which have been opposing an increase in the tax are continuing their fight.

Kerosene

Lessened consumption incidental to the warmer weather, coupled with slightly large stocks in some parts of East Coast territory, have combined to keep the market in weak position. The posted price for 41-43 water white kerosene in tank car lots continues held at 5½ cents, but considerable illuminating oil is available at 5¼ cents and the general market range varies between that level and the posted quotation.

Retail kerosene gallonage was again rather limited, but marketers did not announce any change in their posted quotations. Tank wagon kerosene competition is much less keen than that experienced in gasoline marketing, and leading sellers are meeting with no serious difficulties in maintaining their markets at posted price levels.

Diesel Oil

The only development in the eastern market was a reduction of 1 cent in the Diesel oil price at Miami, Fla., bringing the market down to 7½ cents. This is still considerably over the quotation at other Atlantic Coast ports, and is explainable by the fact that Diesel sales at that port are largely in relatively limited quantities to yachts and other small consumers.

Locally the posted price remains unchanged at $1.30 per barrel, with refiners reporting a fairly well-sustained demand at that level. Marine sales continue of routine proportions, but more activity is noted in the industrial division.

The posted price for bunker "C" fuel oil holds unchanged at 60 cents, with the market routine in character. Marine consumption continues affected by the slump in shipping operations, but the domestic market is showing some improvement.

Reports of a pending increase in domestic crude oil quotations have aroused some interest in East Coast fuel oil circles, as indicative of a possible strengthening factor in the position of heavy oils.

East Coast refiners, particularly those operating in the New York harbor area, are greatly interested in efforts now being made in Congress to legislate the "whoopee cruise" business out of existence. The short cruises which the major steamship lines have been running out of New York, generally of two or three days' duration, and designated as cruises to "nowhere" have brought considerable bunker "C" and Diesel oil business to refiners here.

Gas Oil

Under the influence of heavy stocks and quiet demand, the gas oil market has shown continued softness. Refiners are posting 4 cents for recycled oil, 28 gravity plus, in tank car lots at terminals, but the average going price continues around 3½ cents.

Gas manufacturing companies are drawing stocks on contract in good volume, but a number of the utility companies are using an increasing proportion of heavy fuel oil in their manufacturing operations. Shipments of gas oil from California and the Gulf to the local market area continue of small amount.

Lubs

Buyers were back in the market for cylinder oils in better volume, and the market took on considerable activity toward the latter part of the period. No price changes developed, but sellers noted a definite firming-up in market sentiment on the part of refiners, and offerings of cylinder oils for later delivery were infrequent. Present trading, it is declared here, indicates a definite policy of immediate replacement buying on the part of the trade, as well as the anticipation of later requirements to some extent.

Gallonage in the industrial lub division continued of routine proportions. Consuming manufacturers were ordering forward tank car shipments only as the oil was required, and were not accumulating reserve stocks to any appreciable extent.

Furnace Oils

Warm weather has affected the volume of furnace oil sales, and last week's market was a quiet affair.

Refinery shipments to the jobbing trade showed some falling off, and marketers reported that consuming demand had likewise been adversely affected by the continued mild weather.

While stocks of furnace oils continue fairly plentiful, there is relatively little price cutting going on in the market, and posted quotations appear fairly steady.

Paraffin Wax

There was a slight pick-up in domestic demand, but the volume of new business was not sufficiently large to bring about a higher price range, and quotations were unaltered at previous levels.

Traders reported some improvement in export demand for both crude scale and fully refined grades, and some business was closed for prompt shipment and for delivery during the coming month.

Petrolatum

Buying interest in the white grades continued along fairly active lines, and the market showed a steady tone at recent fractional price advances.

Some inquiry was reported for later deliveries, but sellers as a rule are not inclined to book forward shipment material at current price levels.

Export Market

A cargo of 7,500 to 8,000 tons of gasoline was reported sold for export at the Gulf, but confirmation was lacking. Beyond this one instance, no business was reported, and inquiry continued at a minimum. Posted prices were nominally unchanged at previous levels.

Export operators, who have not been called upon to handle any cargo business from the Gulf during the past month, are considerably concerned over the export outlook. France is diverting considerable of her business to Rumania, under the provisions of a compact recently entered into, and Germany is completing plans for a further limitation of imports of gasoline and other refined products, with the application of import quotas still further complicating the situation.

The tariff outlook in Great Britain is not promising, from the standpoint of American oil exporters, and other world markets which formerly drew a large percentage of their refined products requirements from the United States are also easing off in their takings.

The present situation was anticipated by a number of the major integrated companies, and the wisdom of their extensive development of foreign marketing subsidiaries is now being abundantly testified to by current developments in world markets.

California sellers are reported to have booked a fair amount of fuel oil business for shipment to Japan, but increased refined products purchases by Japan in connection with her present naval and military operations are not expected to become large enough to have any effect on the Gulf market.

Petroleum Exports

Increased inquiry for refined products for export shipment was reported and the outlook was somewhat improved. East Coast interests are getting slightly more call from South American markets, and the difficulties which the Soviet oil syndicate has become enmeshed in one South American company are being followed with interest by those companies whose trade in that country has been seriously menaced by marketing plans developed by Russia.

The following table shows refined petroleum exports from the local port for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Feb. 6	Jan. 30	Jan. 23
Gasoline	140,000	52,000	72,000
Naphtha	650,000	350,000	135,000
Kerosene	175,000	55,000	65,000
Fuel oil	225,000	11,000	5,000
Lubricating oil	1,135,000	805,000	640,000
Petroleum, ref.	715,000	340,000	1,050,000
	Pounds		
Petrolatum	90,000	3,000	100,000
Paraffin wax	1,380,000	1,075,000	4,390,000
Refined	112,000	245,000	390,000
Scale	125,000	50,000	285,000
Lubricating grease	475,000	415,000	829,000

Export operators here are greatly interested in reports from California indicating that considerable quantities of bunker oil have been bought in that market for shipment to Japan. It is not expected that increased consumption of petroleum products incidental to current Japanese military activities will reach the point where East Coast or Gulf markets will get any substantial business, as it is felt sales departments of integrated companies operating in the Far East will be able to take care of gasoline and lub oil requirements of the Japanese military forces in the event that suitable reserves of these products have not already been

built up in Japan in preparation for the current increase in consumption.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended February 6 totaled 1,176,000 bbls., a daily average of 168,000 bbls., compared with 1,613,000 bbls., a daily average of 230,429 bbls. for the previous week and a daily average of 201,161 bbls. for the month of January. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	118,000
Boston	104,000
New York	598,000
Philadelphia	278,000
Others	78,000
Total	1,176,000
Daily average	168,000
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	1,176,000
Daily average	168,000
Daily average January	201,161

Distribution of total imports is as follows:

Crude	730,000
Gasoline	173,000
Fuel oil	273,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended February 6 totaled 25,000 bbls., a daily average of 3,571 bbls., compared with 173,000 bbls., a daily average of 24,714 bbls. for the previous week, and a daily average of 29,548 bbls. for the month of January. All of the receipts during the week ended February 26 were gasoline, the cargo being delivered at Philadelphia.

There were two cargoes of California refined products reported cleared during the week for the East Coast, the tanker New Jersey for New York with 72,800 bbls. of gasoline, and the Sun for Philadelphia with 115,000 bbls. of gasoline.

REFINING EXPANSION IN CHICAGO AREA

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costs more than estimated, and that the consumers will not take chances on naphthas thus retailed unless price is made a convincing consideration.

Kerosene Tank Car Markets

There is little activity in kerosenes at this time. However, marketers are of the opinion that export business will be resumed shortly. Prices are unchanged at 2½ to 2⅝ cents for the 41-43 water white kerosene, and 2⅝ to 2⅞ cents for the 42-44 water white material.

Fuel Oils and Gas Oils

The placing on the markets of large quantities of straw distillate by a number of large sellers has served to depress prices on this material. The 38-40 straw distillate has dropped an eighth to 2 and 2⅛ cents, and the 32-36 zero material shows a narrower range of 1¾ to 2 cents. Industrial 32-36 gas oil is down an eighth of a cent at 1⅛ to 1¼ cents. The 18-22 gravity and heavier fuel oils have failed to respond to an improvement in the 28-30 and the 22-26 gravity materials. Lack of betterment in the heavier grades is blamed on the dumping of fuel oils of these gravities in the district from Ohio, West Virginia and Kentucky. The 28-30 zero fuel oil has moved up from a range of 50 to 60 cents, to a new range of 55 to 60 cents. The 22-26 zero material has advanced 2½ cents a barrel to a range of 35 to 40 cents. Both of these materials are scarce in the district.

The road oil business shows little promise from the standpoint of price as compared with past seasons. The 2,000,000-gallon road oil letting for Champaign, Ill., week before last has to be done all over again although a responsible company tendered a bid of 3.46 cents against quotations of 4.06 cents made by competitors. The inquiry will be readvertised March 1, and, according to observers, the prices will be moved down. Douglas County, Illinois, is advertising on 1,000,000 gallons of road oil and there is little doubt that the bids tendered will reflect the occurrence in Champaign County. There is one encouraging note, and this is the fact that several refiners and distributors who have always entered bids on this business have become disgusted and refuse to participate in the lettings.

CALIFORNIA FIELDS

(Continued from Page 46)

hast just passed the 4,250-foot level in No. 1 De Francis and unless something unforeseen develops this well should be in a position to make a bid for production some time in March.

Fruitvale

Development work in the Fruitvale Field of Kern County continues to increase and tentative plans calls for the drilling of several additional wells. Practically all of the work under way is located in the Fairhaven section where a number of 1-acre tracts were thrown open for promiscuous development early last year. There are three potential producers nearing completion at present. These are Bluerock Oil Co.'s No. 1 Fruitvale, Mohawk Petroleum's No. 1 Fishback and Plymouth Petroleum Co.'s No. 1 Fruitvale. Additional drilling has been started by Bankline Oil Co., Clark Oil Co., Ray Petroleum, Mohawk Petroleum and Sea Hawk Petroleum.

Belridge Oil Co.'s No. 64 in the North Belridge Field of Kern County, which blew out a few weeks ago, is apparently not as important as originally believed. At any rate the company has resumed drilling in this well which sanded up after a blowout of two hours' duration and is at 7,675 feet. This well, in Section 27-27-20, appeared to have discovered a new zone below the present productive Temblor but it failed to hold up after its premature blowout. In the South Belridge Field the General Petroleum is still in the brown shale in its deep test, No. 1 Berry, at 8,100 feet. Operators in the Ventura Avenue Field have ratified a proposal to reduce daily production to 35,000 bbls. and preparations are being made to put this program into effect in the very near future. This curtailment will be of material assistance to the State and is in line with the statewide curtailment program. Instead of shutting in a group of high gas-oil ratio wells, operators will endeavor to make such changes as may seem necessary to alleviate the situation. The plan as proposed has been approved by R. D. Bush, state oil and gas supervisor, who has been attempting to eliminate gas waste in this field.

MICHIGAN FIELDS

(Continued from Page 46)

Michael Bauman farm, NE SE SW, Section 21, Wheatland Township, Macosta County, reported dry at a total depth of 3,908 feet.

Pacific Exploration Co.'s test on the William Ballagh farm, NE NW NW, Section 32, Sheridan Township, Huron County, reports a slight showing of oil at 4,000 feet, but not in commercial quantities.

New Drilling Permits

Frank L. Maire and others procured a permit to drill No. 1 well, 650 feet from the north line and 330 feet from the east line of the Earl F. Wilson farm, NE SE SE, Section 12, Gilmore Township, Isabella County. Haskell, Conover and others secured drilling permit for a well on the E. L. Rhemenschnider farm, NW SW NE, Section 14, Greendale Township, Midland County. Pure Oil Co. got a drilling permit to drill No. 1 well, 990 feet from the north line and 330 feet from the west line of the Emma O. Reed, in the N half SE, Section 10, also in Greendale Township. Same company has a permit to drill No. 2-B well, 990 feet from the north and west lines of the Ed Barnard farm, NW SW, Section 10, same township.

B. A. Broune & Co. secured a drilling permit for No. 1 in the southeast corner of the Albert L. Smith farm, SE SE SW, Section 31, Oceola Township, Livingston County, and near Howell. Keldt & Craft secured a drilling permit for No. 1 on the Killinger farm, NW NE, Section 15, Conway Township, same county.

Smith Petroleum Co. has a permit to drill No. 1 well, 1,070 feet from the north line and 250 feet from the west line of the William K. Smith farm, SW SW NW, Section 15, Lyon Township, Oakland County.

A permit to drill a well in the northwest corner of the Sidney L. Williston farm, NW NW SW, Section 22, Swan Township, Saginaw County, was made to William E. Caster.

CANADIAN FIELDS

(Continued from Page 42)

that company's deliveries from 2,173 bbls. to 4,237 bbls. Hylo Oils' No. 1, which bailed nearly 90 bbls. a day of light crude in December, dropped to around 30 bbls. in January.

With a shorter month and no new completions yet recorded, deliveries for February are expected to show a still further decline. Two tests now drilling in the lime should get production within the next two weeks, which may offset the decline in the older wells.

South Turner Valley

In the Mercury tract, South Turner Valley, Miracle Oils' No. 3, LSD 11, Section 4-19-2w5, is drilling more than 309 feet in the Madison lime at 5,799 feet. The drill has gone through the first porous horizon in the lime and is apparently getting close to the second. No large gas production has yet been reported. In the same section, Hylo Oils' No. 1, LSD 12, offsetting Mercury's No. 1 producer, has resumed drilling after running 6-inch casing to below 5,400 feet. The test is below 5,430 feet and is apparently still off the lime, despite unofficial reports that it had got the Madison. Some crude production is being swabbed from the Home sand through the 6-inch casing.

Shareholders of Mar-Jon Oil Co. held their annual meeting recently at Vancouver, British Columbia, re-electing the old directorate, consisting of G. M. McBain, E. M. Craig, John Finch, A. M. Howell and H. G. Harding. The company is interested in Mar-Jon Freehold's No. 1, LSD 9, Section 28-18-2w5, the most southerly test in the Turner Valley, being drilled jointly with Freehold Oil Corp. of Calgary and standing cemented at 2,845 feet.

Central Turner Valley

In Central Turner Valley, Canada Southern Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, is reported standing cemented in the top of the lime around 3,827 feet. McLeod Oil Co.'s No. 1, same LSD, is deepening in the lime around 3,720 feet with a slight increase in gas production.

Test at Aldersyde

While drilling in the foothills is practically at a standstill, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, on the High River-Aldersyde structure is reported to have resumed drilling this week at 5,365 feet.

Border Fields

On the Twin River structure near Lethbridge, Parco Oil Co.'s No. 1, LSD 16, Section 34-1-20w4, showed a fair indication of commercial crude in a 35-foot sand in the top of the Madison at about 3,870 feet. The production test may not be completed for a week or two.

On the Lethbridge structure, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, is drilling below 4,547 feet and has not yet reached the Madison lime, which seems to be very close.

Keho Lake

On the Keho Lake structure, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, is standing cemented at 4,920 feet and will likely remain shut down until April 15, when tools will be sidetracked and the test completed. The test had good shows of high-grade crude in the Benton shale at 3,680 feet and 3,776 feet, as well as in the top of the Madison lime. Owing to a difficult fishing job it was decided to cement back and drill past the tools to test the producing horizon in the lime. Future drilling by the Hudson's Bay Oil & Gas Co. in this area will depend on the results secured from the discovery well.

On the Milk River structure, Commonwealth Petroleums' No. 1, LSD 8, Section 9-3-15w4, is cleaning out with fishtial bit preparatory to resuming with rotary from 5,090 feet. The test is now in the lower Devonian and is being completed by the Sheldon-Burden Co. under contract. It was carried to the present depth with cable tools but it is desired to secure cores of the lower Devonian formation, previously untested in the border area of southern Alberta. The dril got the Madison lime at 2,800 feet and went through approximately 685 feet of that formation and 1,605 feet of the Devonian lime, some small shows of oil and gas being met but nothing approaching commercial production. A break with possible production has been looked for in the lower Devonian; but the test will, if necessary, probably be carried below that formation.

Whitlash Well

On the Montana side, the Patterson well in the Whitlash Field is reported pumping a settled production around 25 bbls. a day, after taking a flush production of 100 bbls. Some 500 bbls. of additional tankage was secured from Bear's Den to permit continuous production. As the structure apparently extends into Alberta, the strike is of interest to operators on the Canadian side. Another interesting test is the Fulton well on the Montana end of the Milk River structure. This has been carried to below 2,865 feet with cable tools and is reported to log very closely with Alberta Pacific Consolidated's deep test on the Spring Coulee structure in Alberta. The latter encountered numerous small shows of oil and gas, and it is hoped some of the corresponding horizons in the Montana test may show good commercial production.

Manitoba Test

In the Manitou district, southwestern Manitoba, Commonwealth Petroleum's No. 2, LSD 2, Section 26-2-9wPM, is bottomed at 1,300 feet and underreaming below 1,200 feet, preparatory to drilling deeper for commercial gas production.

British Columbia Tests

In the Kelowna district, British Columbia, Okanagan Oil & Gas Co.'s No. 1, Section 2-26-Osoyoos, is reported standing at 2,350 feet, 180 feet in a marine limestone with considerable gas largely held back by a hole full of water. The well is to be put in shape for a test of the gas flow, and may be drilled deeper. Julius Rickert, F.R.G., is resident geologist.

Lancashire Oil Co., which some time ago took over the Sumas operators in the Fraser Valley near Vancouver is reported to have finished one of the Sumas wells as a small commercial gasser at 866 feet. The Lancashire company is reported planning further tests in this area and at Strawberry Hills, near Abbotsford. Lancashire's No. 1 is reported to have got three shows of gas at 480 feet, 520 feet and 866 feet. There is a possibility that deeper drilling may develop larger production. British Columbia-Alberta Oils, Ltd., is reported to have contracted for its test in SE Section 30-16-E.C.M. near Abbotsford. Fraser Valley Oil Wells, Ltd., has let contract for a test near Aldergrove, where deep drilling some years ago indicated commercial gas possibilities.

Peace River Project

Four-X Oils, Ltd., of Vancouver, British Columbia, has been registered in Alberta with H. A. George of Peace River as agent. Its No. 1 test was located a couple of years ago in the old Peace River Field in LSD 5, Section 27-80-15w4, close to the old Victory well just north of the town. Registration in Alberta is understood to presage a renewal of drilling activity in connection with pending projects to distribute gas in Peace River. No. 1 has been standing at 400 feet.

Simpson Salt Plant

In southeastern Saskatchewan, Simpson Oil Co. is piping its No. 1 in Section 9-29-25w2, and will install pump to handle the salt brine encountered at 3,500 feet in drilling for oil. As soon as the

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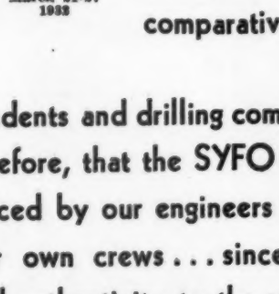

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HOUSTON, TEXAS
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CALGARY, ALBERTA, CAN.
Room 1, Central Block

plant is in running order, it is planned to drill a second test for oil.

Ontario Operations

In Lambton County, Ontario, Sarnia Oil & Gas Co.'s test in Lot 18, Concession 2, Enniskillen Township, southeast of Oil Springs, has been finished as a small gasser at 2,095 feet.

In Kent County, Olga Oil & Gas Co.'s No. 6 is rigging up in Raleigh Township, 1,500 feet northwest of Olga's No. 5, finished recently with fair gas production.

In the Petrolia Field, James Nesbitt and Richard Miller of Sarnia have purchased the oil property of Merle Volway in the East End. The property, formerly owned by the Canada Crude Oil Producers, was purchased by Mr. Volway last July on his return from a drilling contract in Dutch Borneo, but owing to ill health he has been forced to sell. It consists of 58 acres with 32 producing wells and modern pumping equipment.

ROCKY MOUNTAIN AREA

(Continued from Page 42)

NW NW Section 32-34-77, Geary Dome, northwest of the Big Muddy Field and between the latter and the Salt Creek Field, has proved a disappointment in the Dakota sands, but is drilling ahead at 6,192 feet. The Muddy sand was dry and the Dakota made 5,000 bbls. of hot water per day. It then drilled into what was believed to be the top of the Lakota with no encouraging results, but to be sure of the identity of the formation, drilling is being continued a little deeper. This test was started in the fall of 1930. It topped the Frontier formation at 4,863 feet and found the first sand dry. It was 100 feet thick. The second Frontier at 5,309-14 feet showed a little gas. The 9⅝-inch was cemented at 5,331 feet last February and operations suspended until the Midway test was drilled down to the Sundance.

Sidney H. Keoughan, head of the Mutual Oil Syndicate, which was formed recently to acquire the 75 per cent interest in the Midway and North Geary Domes held by Midwest Refining Co., Salt Creek Producers Association and Mountain Producers Corp., is perfecting plans for the development of the Midway structure and the testing of the North Geary, which has not yet been drilled. A party of New York financiers, headed by T. M. Pettigrew, president of the Petroleum Management Corp., are expected in Wyoming the last of this week to go over the properties and determine upon details of the plans. In a memorandum prepared for the New York interests, it is stated that the Midway Field is covered by 7,500 acres of government permits, 980 acres of patented land and 320 acres of oil placer claims upon which application for patent has been made, a total of 8,800 acres. When the second Wall Creek sand was first drilled it showed 40 feet of saturation and was reported to have been good for approximately 700 bbls. per day. Mr. Keoughan estimates that a minimum of 3,000 acres will be productive. The Midwest has agreed to purchase the oil. That company will be reimbursed for the discovery well out of half of production. The North Geary Dome embraces 6,640 acres which have not been tested, but upon which the geology was worked out last summer by coredrilling.

Converse County

A co-operative agreement covering principally the spacing of wells to be drilled in the Big Muddy Field has been reached between the operators and the State Land Board. It calls for holding down to one or two wells to the 40 acres as far as possible under existing lease agreements. The agreement is to run for 10 years and applies to the deeper horizons. The Wall Creek has about been drilled up, but only two wells have been put down to the Lakota which was found productive about a year ago in the Ohio Oil Co.'s No. 5 Jones, NW NE NE Section 9-33-76. This well gauged 345 bbls. initial. On account of the location of this well, three offsets to be drilled probably can not be limited to one well to the 40 acres. While there is considerable territory to be drilled to the deeper sands, no extensive operating program is in sight just at this time.

Washakie County

Ohio Oil Co.'s No. 1 Strothers, SW SE NW Section 19-45-92, Neiber Dome, is plugging to abandon after testing all horizons down to and including the Sundance at a total depth of 8,596 feet. It plugged back gradually to test some showings in the Frontier, the last at 7,100-25 feet, but these proved to be of no value. This was the second deepest test drilled in the Rocky Mountain area. The 9⅝-inch was carried to 6,144 feet and the 7-inch was cemented at 7,260 feet.

Park County

Midwest Refining Co.'s No. 4 Rosenberg, NE NW NE Section 26-58-98, Frannie Dome, is drilling at 2,742 feet. It topped the red beds at 2,666 feet and the Embar is expected under 3,200 feet.

Weston County

Jones-Rose Syndicate's No. 1, NW SW NE Section 21-46-63, in the shallow district on the east side of the Osage Field, has been completed as an average well at 365 feet. The oil rose 150 feet in the hole in 12 hours.

West Osage Oil Co.'s No. 2, SE cor. NE Section 15-46-64, on the west side, is resuming at 1,520 feet at which depth the 8¼-inch was cemented.

Tug Oil Co.'s No. 1, NW cor. SW Section 15-46-64, is setting the 8¼-inch at 1,800 feet.

Deep snows and cold weather have held up operations in the Osage Field and no new locations have been reported. Spring will see about 15 rigs in operation. One contractor reports he holds four signed contracts calling for drilling as soon as possible.

MONTANA

Carbon County

Ohio Oil Co. is building rig for its No. 2 William Robinson, C SE SE Section 3-7s-21, in the Dry Creek Field, a west offset to its No. 1 Chapman, C SW SW Section 2-7s-21, recently completed with an initial production of 886 bbls. in 24 hours. Its No. 1 William Robinson, C SW SE Section 3-7s-21, for which rig was up, will not be drilled at this time. The Chapman well, which was shut in after being tested, is being put on production. Ohio's No. 2 Montana Industrial, C NW SE Section 11-7s-21, is bottomed at 1,012 feet and standing cemented.

Carbon Oil & Gas Co.'s No. 1 McMinn, NW SW SW Section 7-7s-22, a half mile south of its No. 1 Armstrong, is rigged and ready to spud. Rotary rig owned by Charles E. Orchard is being used and electric power will be obtained from the Montana Power Co.

Ohio Oil Co.'s No. 1 Kuchinski, NW SE NE Section 15-7s-22, Golden Dome, is drilling at 1,065 feet, with electric drive and rotary tools.

Liberty County

California Co.'s No. 1 Ross, NE SE NE Section 3-33n-6e, Utopia district, is drilling at 2,515 feet. Water sand at 2,402-10 feet was cased off with the 10-inch at 2,425 feet.

Northland Oil & Gas Co.'s No. 1 Yurman, C SE SW Section 32-33-5e, Liberty Dome, cemented cave at 3,785 feet.

Glacier County

Fulton Petroleum Co.'s No. 1 Blackfeet, SW NE NE Section 28-36-12w, Milk River district, is straightening hole at 2,880 feet.

Teton County

California Co.'s No. 1 Sullivan, NW NE NW Section 34-27-7w, Bynum district, is shut down until spring.

Cascade County

Charles Merz and others' No. 1 Sheffelt, SE NW Section 4-21-4e, Black Horse Lake, is bottomed at 870 feet and underreaming 8¼-inch at 835 feet.

Toole County

Oregon Oil Syndicate's No. 1 Barthelote, SW NE SE Section 20-36-2e, Barthelote district, is fishing for bailer at 2,268 feet.

UTAH

Diamond Oil Co.'s No. 1, SE NW Section 16-8s-5e, Utah County, is drilling at 3,470 feet in the lower Pennsylvanian.

Utah Southern Oil Co.'s No. 1 Balsey, C NE NE Section 31-23-21, Grand County, is shut down at 5,300 feet after

cementing back to 5,200 feet to sidetrack bit.

Pipe Line Runs

Average daily pipe line runs for the week ended February 13:

WYOMING	
Salt Creek	20,880
Badger Basin	50
Big Muddy	1,690
Byron-Garland	1,350
Greybull	10
Dallas-Derby	130
Elk Basin	660
Ferris	20
Frannie	30
Grass Creek	1,930
Hamilton Dome	770
Hudson	340
LaBarge	940
Lance Creek	110
Lost Soldier	2,420
Osage	990
Pilot Butte	40
Rock River	1,680
Poison Spider	260
Teapot	20
Total Wyoming	34,280
MONTANA	
Buckley-Border	630
Cat Creek	930
Dry Creek	140
Kevin-Sunburst	4,075
Lake Basin	70
Ponders	1,210
Total Montana	7,055
COLORADO	
Florence	340
Fort Collins	930
Iles	770
Moffat	720
Orchard	509
Rangely	20
Tow Creek	300
Total Colorado	3,590
NEW MEXICO	
Rattlesnake	600
Hogback	240
Table Mesa	50
Artesia	500
Cap Rock	600
Hobbs	31,435
Jal	848
Lea City	2,652
Eunice	366
Texas Pacific	153
Total New Mexico	36,944
Total Rocky Mountain area	81,869
Total previous week	80,906
Difference	963

KANSAS FIELDS

(Continued from Page 43)

Boertz, NE cor. SE NE, Section 13-18-12w, is dry and abandoned at 3,752 feet. Midwest Refining Co.'s No. 8 Berscheidt, C NW SE, Section 12-20-11w, is dry and abandoned at 3,345 feet.

Butler County

Blaksley & Wentz' No. 2 Holliday, SW cor. NE, Section 24-27-4, an old well deepened to 2,019 feet, has been completed for 30 bbls. in sand 2,017½-19 feet.

Chase County

K.R.&T. Gas Co.'s No. 1 Stevenson, C NE NE, Section 27-19-6, is spudding.

Cowley County

McKnabb and others' No. 2 Hutto, Lot 10, Block 25, Reynolds College View Addition to the city of Winfield, Section 22-32-4, is a rig. Roth & Faurot's No. 1 D. Cavitt, Lot 4, Block 17, Reynolds College View Addition to the city of Winfield, Section 22-32-4, is a rig. No. 3 Monerief, Lot 1, Block 26, Reynolds College View Addition to the city of Winfield, Section 22-32-4, is preparing to deepen from 2,618 feet. No. 1-A Reidy, SW cor. NW NE, Section 8-32-8, is spudding. Sooby and others' No. 1 Moffett, CWL NW SW, Section 10-32-5, has been abandoned at 743 feet.

Ellsworth County

Slick, Pryor, Lockhart and others made location for No. 1 C. Heiken, NE cor., Section 26-17-10w.

Greenwood County

Gore and others made location for No. 2 Smith, SE cor. SW NE, Section 6-24-12. The Prairie Oil & Gas Co.'s No. 3 Boles, SE cor. NW NW, Section 15-22-12, has been completed for 45 bbls. in sand 1,746-71 feet, total depth 1,778 feet.

Harvey County

F. H. Hollow's No. 1 Fee, SW cor. NW, Section 20-22-3w, has been completed for 114 bbls. in sand 3,507-17 feet.

McPherson County

Shell Petroleum Corp. made location for No. 1 Helstrom, SW cor. NE, Section 35-19-3w. Stanolind Oil & Gas Co. and Olsen Drilling Co.'s No. 1 Johnson, NW cor. SE, Section 28-19-1w, is dry and abandoned at 3,494 feet.

Marshall County

Blaser and others' No. 1 Kunkel, NE cor. SE NW, Section 13-2-6, has been abandoned at 630 feet.

Morris County

Rose and others made location for No. 1 Hirt, NW cor. SW, Section 15-15-7. Castle and others' No. 1 Furney, NE cor. SE, Section 16-16-8, is a machine rigging up.

Rice County

Allison & Fitzwilliams' No. 1 Walsten, NW cor., Section 2-21-6w, is dry and abandoned at 3,485 feet.

Sedgwick County

Continental Oil Co. is building the rig for No. 1 Hampson, SE cor. NW, Section 15-25-1e. National Refining Co. staked location for No. 4 Murdock, C SE SE, Section 18-27-2.

Woodson County

Sheedy and others made location for No. 1 Barriard, CSL SW NW, Section 14-25-13.

OKLAHOMA FIELDS

(Continued from Page 35)

The Prairie Oil & Gas Co.'s No. 3 Hassman, NW cor. SE NE, Section 3-8-5, made 290 bbls. from Wilcox sand 4,198-4,214 feet and 50 bbls. from Hunton lime, in 18 hours. Empire Oil & Refining Co.'s No. 1 Davis, NW cor. NE NE, Section 30-7-8, flowed 3,234 bbls. from sand 2,999-3,009 feet, total depth 3,012 feet.

Wagoner County

Sands Petroleum Co. moved a machine in for No. 1 T. Robin, SW cor. SE SW, Section 23-18-15. Marrs and others' No. 1 Snake, SE cor. NE NW, Section 26-18-15, has been completed for 2,500,000 feet of gas in sand 1,025-68 feet, total depth 1,105 feet. H. L. Enos and others' No. 1 Trent, SW cor., Section 29-18-17, is a dry hole at 480 feet.

Tulsa County

Chastain Oil Co.'s No. 1 A. Barnett, NE cor. SE NE SE, Section 13-18-14, is rigging up. A. E. Bradshaw and others' No. 2 Cowans, NW cor. SW SE, Section 7-19-14, has been completed for 2 bbls. in sand 1,284-93 feet.

EAST AND EAST CENTRAL TEXAS WILDCATS

(Continued from Page 26)

Empire Gas & Fuel Oil Co.'s No. 1 V. L. Taylor, 330 ft. from N line and 352 ft. from W line of 40.86-ac. lease, M. Tennison Sur. ..... Rig up.

Faith Oil Co.'s No. 1 Walters, 246 ft. E of W line and 145 ft. N of S line and SW cor. of survey, B. W. Witcher Sur. ..... Location.

Fither et al's No. 1 F. Thomas, 160 ft. from S line and 150 ft. from W line of 10-ac. lease, C. H. Alexander Sur. ..... Spudding.

Glasscock et al's No. 1 J. H. Alexander, center of W 5 acres of N 10 acres of 50-ac. tract, D. Sanchez Sur. ..... Derrick.

Glasscock Bros.' No. 1 E. Bade, 157 ft. from S line and 409 ft. from W line of lease, G. W. Hooper Sur. ..... Derrick.

Lewis Godlin's No. 1 E. L. Walker, 330 ft. N of road, 330 ft. from E line of 80.2-ac. tract, M. Dillard Sur. .. Derrick.

Gulf Production Co.'s No. 1 A. King, 120 ft. E and 330 ft. N of SE cor. of church, John Moffit Sur. .... Location.

Gulf Production Co.'s No. 1 R. H. Still, north offset to Turnbow's No. 2 Elder, John Wilkerson Sur. ..... Derrick.

Hastings et al's No. 1 Wallace, due SE offset to Victory Smith's No. 1 Knowles, M. Tennison Sur. ..... Moving in.

Harry Hamberry's No. 1 W. E. Foshee, center of 2.56-ac. tract, H. R. Hokit Sur. ..... Drlg. 1,843 ft.

J. F. Heard's No. 1 fee, 200 ft. SW of Pace's No. 1 Elder, Mary Van Winkle Sur. ..... Moving in material.

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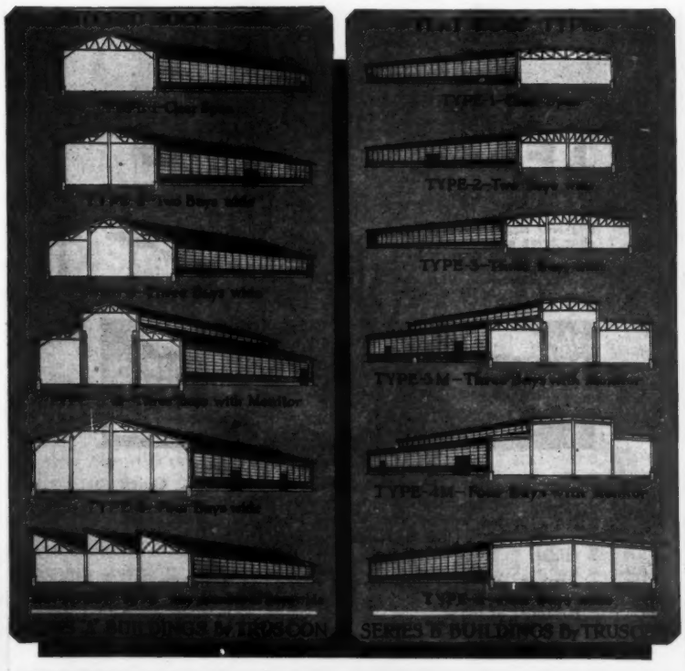
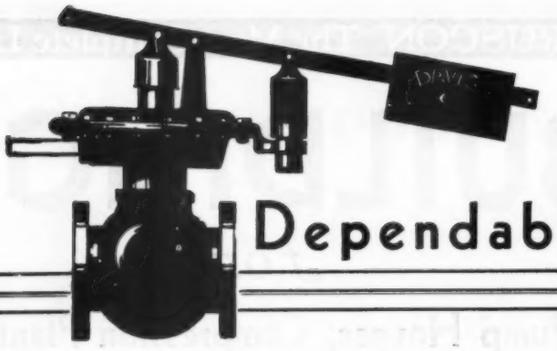
Although only one inch thick, this modern wall panel —exclusive with Truscon—equals a 12-inch brick wall in insulating value against heat and cold. Ferroclad consists of good insulating material permanently sealed between galvanized steel sheets, assuring strength, durability and fire protection at low cost.

Suggestions, catalog and quotations on request.

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

Engineering and Sales Offices in Principal Cities





Dependable

Simplicity makes for reliability. Especially so in an automatic valve like the Davis Casinghead Gas Regulator. This valve has but one internal movable part—the balanced, bevel seated disc connected to a flexible diaphragm. Operation is just as simple—the counterweight holds the valve open and the vacuum closes it. A uniform well vacuum is maintained regardless of high vacuum or fluctuations in the gathering line.

Davis Casinghead Gas Regulators will save money and prevent grief on your well vacuum lines.

DAVIS REGULATOR COMPANY
2543 S. Washtenaw Avenue
Chicago, Illinois

WESTCOTT & GREIS, Inc.
Sales Engineers
TULSA LOS ANGELES DALLAS

Automatic valve makers for over fifty years

DAVIS VALVE SPECIALTIES

O&GJ 2-18 Gray

Have you ever seen an Air Valve like this?

Up, it's on
Down, it's off

STOPS LEAKS

In a test under 100 lbs. pressure a Q. O. C. Air Valve *was still tight* against leakage after being opened and closed 30,000 times. If you could see inside this valve you would quickly understand why such unfailing service is possible.

Used by 68 Railroads

The Murdock Q. O. C. AIR VALVE

Test this remarkable valve under your conditions. Quick acting; stands constant opening and closing. Does not leak; cannot be left partly open. Saves air, power and compressors. Does not require regrinding. *Write for folder.*

THE MURDOCK MFG. & SUP. CO.
Established 1853 Cincinnati, Ohio

D. M. Hester's No. 1 Crews, 299 ft. W. and 166 ft. S of SE cor. of William W. Friars Sur. ..... Rigging up.
D. L. Hoffman's No. 1 B. F. Phillips, 330 ft. from E line and center of N and S lines of 16.5-ac. tract, D. Ferguson Sur. ..... Derrick.
Humble Oil & Refining Co.'s No. 1 J. H. Sheppard, 330 ft. from S and W lines of lease, T. Allen Sur. ..... Derrick.
Imperator Oil Co.'s No. 1 Geo. Ritchie, 120 ft. N and 15 ft. W of Monzell and Currie's No. 1 Church, Blk. No. 4, M. Dillard Sur. ..... Drlg. 2,479 ft.
Jackson and Bradstreet's No. 1 M. Young, center 2-ac. tract, J. R. Crosby Sur. ..... S.D. 200 ft.
Jones and O'Brien's No. 1 Hughy-Ross, 1,310 ft. N and 333 ft. E of SE cor. of William McQurry Sur. .. Drlg. 849 ft.
Kroll's No. 1 J. Spear, center ¾-ac. lease, Blk. 4, Mary Van Winkle Sur. ..... Set csg. 3,523 ft.
K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 5-ac. lease, Mary Van Winkle Sur. .... S.D. 700 ft.
Lucy Petroleum Co.'s No. 1 B. C. Christian, 330 ft. from W line and center of N and S lines of 8-ac. lease, G. W. Hooper Sur. ..... Location.
McBride's No. 1 F. Elder, 205 ft. N and 320 ft. W of SE cor. of 26-ac. lease, John Wilkerson Sur. ..... Derrick.
Manzell et al's No. 1 C. H. Moore, center of Blk. No. 3, M. Dillard Sur. ..... Rigging up.
Patrick Pet. Co.'s No. 1 Watson, 330 ft. from N line, 330 ft. from E line of lease, M. V. Winkle Sur. .... Spudded.
J. D. Patty et al's No. 1 J. C. McCormick, 207 ft. SE at right angles to Gladewater-Tyler road and 540 ft. SW of Abernathy and Kirkpatrick's No. 1 Gregston, M. Dillard Sur. ..... T.D. 100 ft.
Pilot Oil Co.'s No. 1 J. C. Bumpass, 330 ft. from S and W lines of 25-ac. lease, W. H. Castleberry Sur. ..... Top sand 3,509 ft.
Pilot Oil Co.'s No. 1 G. S. Maddox, center of S 8-ac. of W 15 acres of 55-ac. tract, D. Sanches Sur. ..... Rig up.
Rajo Oil Co.'s No. 1 Barrett, 358 ft. from S line and 330 ft. from W line of Shell's 80-ac. lease, Witcher Sur. .. Rigging up.
Reeves et al's No. 1 W. L. Heatland, center of five-eighths-acre tract, midway from Lampton Church and Sarson's No. 1 Hall, D. Sanches Sur. ..... Derrick.
Roeser & Pendleton's No. 1 E. Nicholson, 330 ft. from S line and 150 ft. from W line of lease, Marshall Mann Sur. ..... Location.
Roeser & Pendleton's No. 1 J. M. Farmell, 175 ft. from W line and 330 ft. from S line of 42-ac. lease, D. Sanches Sur. ..... Location.
Ross et al's No. 1, located on Findley & Thomas 50-ac. tract, 150 ft. from S line and 6.66-ac. lease, C. H. Alexander Sur. ..... Derrick.
R. J. S. Germain's No. 1 L. Martin, 343 ft. S and 330 ft. W of NE cor. of 22-ac. lease, T. Johnson Sur. .. Rig up.
Shell Pet. Corp.'s No. 1 B. F. Laird, N offset to Robertson's No. 1 Elder, John Wilkerson Sur. ..... Spudded.
Shell Pet. Corp.'s No. 1 S. C. Fishborn, 330 ft. from N and E lines of 100-ac. lease, F. W. Johnson Sur. ..... Location.
Shell Petroleum Corp.'s No. 1 M. J. Register, 370 ft. from N line and center of E and W lines of 50-ac. tract, D. Dainwood Sur. ..... Location.
Victor C. Smith's No. 1 Knowles, center of Blk. 134, Mary Van Winkle Sur. ..... Derrick.
Sneed et al's No. 1 Griffin Davis, 28 ft. W and 278 ft. N of SW cor. of Gulf's Davis lease, W. P. Chisum Sur. ..... Running csg.
Stanolind Oil & Gas Co.'s No. 1 A. A. Lockhart, 400 ft. from S and E lines of 20.92-ac. tract, M. Tennison Sur. ..... Coring 3,601 ft.
Tom C. Patten's No. 1 Geo. Walter, center of 1-ac. tract, and 396 ft. from W line of lease, Mary Van Winkle Sur. ..... Derrick.
Thompson's No. 1 Cole, E offset to Petroleum Finance's No. 2 Lacy, M. T. Cole Sur. ..... Derrick.
M. E. Trapp et al's No. 1 A. N. Neeley, center of 1.75-ac. tract out of Lion Oil & Ref. Co.'s J. R. Williams lease, P. McAnnally Sur. ..... Derrick.
Valentine Oil Co.'s No. 1 Goyne-Hughey, 6,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. ..... Rigging up.
Wells and Gann's No. 1 Hawkins, center of 1½-ac. tract and 350 ft. due south of Church Lot No. 1, W. P. Chisum Sur. ..... Waiting on csg. to set 156 ft.
Yount Lee Oil Co.'s No. 2 I. Benson, 200 ft. from N line and 330 ft. from E line of "B" lease, D. Sanches Sur. ..... Rig up.

HENDERSON COUNTY

Alma Pet. Co.'s No. 1 T. B. Woodford, located on 529.5-acre tract, 2,500 varas from W line and 1,050 varas from N line of survey, Boly C. Walters Sur. ..... Coring 4,823 ft.
South American Drlg. Co.'s No. 1 D. R. Broone, 330 ft. from N and W lines of SE 40 acres of 425-ac. tract, Thomas Parmer Sur. ..... S.D. 4,374 ft.

HILL COUNTY

Sherman-Houseman's No. 1 J. F. Griffith, in Samuel Waddell Sur. ..... Fishing 3,256 ft.

HOPKINS COUNTY

E. L. Chapman's No. 1 J. D. Jumper, 175 ft. from N line, 285 ft. from W line of lease, Jas. Webb Sur. .. S.D. 230 ft.
Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tract in the John Polk Sur. ..... S.D. 540 ft.

HOUSTON COUNTY

Apex Drlg. Co.'s No. 1 Thompson Bros., 250 ft. out of NW cor. of 200-ac. tract in John Shears Sur. ..... T.D. 2,364 ft.
Ramsland and Ramsland's No. 1 Pennington, 750 varas W of E line and 500 varas from S line of survey on 186-ac. tract, Ramond LaGarza Sur. ..... S.D. 1,692 ft.
C. T. McManus' No. 1 Harron, 300 ft. out of NE cor. of 327-ac. tract, J. P. Procella Sur. ..... Spudded and S.D. 37 ft.

HUNT COUNTY

Branson et al's No. 1 Gray ..... Location.
Russell et al's No. 1 Brooks and Quattlebaum ..... S.D. 1,455 ft.

KAUFMAN COUNTY

Hoffpier et al's No. 1 Kaufman County Farm, 210 ft. from N line, 672 ft. from W line of 524-ac. tract, D. Falcon Sur. ..... Derrick.
Standy Darnell et al's No. 1 Sally Pannill ..... Coring 1,500 ft.

LAMAR COUNTY

G. W. Davy et al's No. 1 McGustion, 450 ft. from S line, 450 ft. from W. line of farm and survey, Galet Wood Sur. ..... S.D. 2,880 ft.
Doyle and Jondeau's No. 1 Martin, 990 ft. from N line and 330 ft. from E line of tract, Joseph Deck Sur. ..... Derrick.
Optometrist Oil Club's No. 1 J. M. McFadden, 450 ft. from S and W lines of McFadden E 25-ac. tract, J. Deck Sur. ..... Drlg. 1,922 ft.

LEON COUNTY

Cooper et al's No. 1 Lynch, 4,000 ft. from W line and 250 ft. from S line of Thos. H. Gardner Sur., and in 200-ac. tract ..... S.D. 1,731 ft.
Salzer Drlg. Co.'s No. 1 Dr. J. M. Blair, 1,010 ft. from N line, 1,986 ft. from W line, Sec. 19, Blk. E, Lucia Hibbard Sur. ..... Derrick on ground.

MORRIS COUNTY

Dumas et al's No. 1 Tom Ball, 1,046 ft. from E and 248 ft. from S of 71-ac. tract, A. S. Young heirs Sur. Derrick.

NACOGDOCHES COUNTY

Adams et al's No. 1 Fuller Brothers, located in a 269-ac. tract, Jose Flores Sur. ..... Location.

Bunte et al's No. 1 A. F. Boatman, 330 ft. from S and 150 ft. from W of 67-ac. tract, Wm. A. Moore Sur....S.D. 1,605 ft.
G. A. Teague's No. 1 Norris, 60 ft. NW of E line and 420 ft. S of road in 37.5-ac. tract, Hossea Y. Barbo Sur. ....Derrick.
Gainer et al's No. 1 Nice Well, 18 miles SE of Nacogdoches, 600 ft. from S and 150 ft. from W of Wells tract in A. Cherino Sur. ....S.D. 3,430 ft.
Joiner and Henson's No. 1 Andy Legg, 330 ft. from N and 330 ft. from W of tract, John Durst Sur. ....S.D. 3,920 ft.
Scully & Harwell's No. 1 R. I. Driver, 1,500 ft. from SE cor. of P. B. Ballard 125-ac. tract, 15 miles SE of Nacogdoches in Patricia De Torres Sur. ....S.D. 3,521 ft.
Taylor-Vaughn's No. 1 Dixon Greer, 160 ft. from W and 450 ft. from N lines of 60-ac. tract in the M. G. Horrera Sur. ....S.D. 265 ft.
Creighton Drlg. Co.'s No. 1 J. N. Stewart, center of 79-ac. tract in the Jose Ignacio Y. Barbo Sur. ....S.D. 3,226 ft.

POLK COUNTY

Humble Oil & Refining Co.'s No. 2-A West Texas Lumber Co., 1,902 ft. S and 70 deg. W along property line from N cor. of survey, thence 100 ft. SW of right of way, M. Chavence Sur. ....Drlg. 210 ft.
Sunshine Oil Co.'s No. 1 Brawley, 150 ft. from S line and 250 ft. from E line of W 100 acres of lease, F. Johnson Sur. ....Location.

RAINS COUNTY

C. H. Bayliss' No. 1 Ownby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ....S.D. 4,036 ft.

RED RIVER COUNTY

Gibbs et al's No. 1 Mace (old well being drilled deeper), 1,200 varas from S line, 1,500 varas from E line of survey, Wm. Cullam Sur. ....Reaming 3,538 ft.
Hoffman and Henson's No. 1 H. H. Lennox, 2,790 ft. W. and 300 ft. S of most easterly NE cor. of survey, J. E. Edmondson Sur. ....S.D. 60 ft.
Harris & Joiner's No. 1 E. Howison, 225 ft. S, 185 ft. W of 79-ac. tract, Wm. Humphreys Sur. ....S.D. 1,940 ft.
Concord Oil Co.'s No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ....S.D. 2,530 ft.
L. G. Priest's No. 1 J. M. Stiles, 900 varas S and 500 varas E most northerly NE cor. of Jones Bankston Sur. in the Levi Dean Sur. ....Drlg. 1,700 ft.

ROCKWALL COUNTY

Bucanner Oil Co.'s No. 1 H. L. Lofland, center of 69-ac. tract in W. M. Bird Sur. ....Set 10-in. csg. 120 ft.

RUSK COUNTY

Barney Carter's No. 1 Jessie Cole, 225 ft. from N line and 160 ft. from E line of 5-ac. tract, D. Shaw Sur. ....Setting surface csg.
S. P. Borden's No. 1 R. G. Mason, center of 7.5-ac. lease and 286 ft. N and W of NE cor. of Magnolia's Moore tract ....Drlg. 2,770 ft.
Brooks Petroleum Co.'s No. 1 J. M. Mayfield, 330 ft. from N line and 150 ft. from W line of 22-ac. lease, D. Clark Sur. ....Location.
Byrd-Frost's No. 1 Buckner, J. E. Peyton Sur. ....S.D. 2,981 ft.
George Demontrand's No. 1 L. J. Pinkston, 330 ft. from S and E line of 22.4-ac. lease out of 74.2-ac. tract, M. J. Pru Sur. ....Derrick.
Everts Drilling Co.'s No. 1 Beasley, 330 ft. from SE line and 150 ft. from E line of tract, T. C. Lloyd Sur. ....Waiting on cmt. to set; T.D. 3,800 ft.
Everts Drilling Co.'s No. 1 Knights and Tabor, 2,700 ft. from N line and 75 ft. from E line of survey, Henry Hobson Sur. ....Location.
C. A. Everts' No. 1 Cole, 210 ft. from N line and 330 ft. from E line of 50-ac. lease, D. Shaw Sur. ..Derrick.
P. T. Fullwood's No. 1 W. N. Brightwell, 275 ft. E of Horse Shoe Syndicate's No. 1 Brightwell, R. E. Winn Sur. ....Rig up.
Golding and Murchison's No. 1 J. D. Strickland, 330 ft. from N and W lines of 183-ac. tract, M. V. Pena Sur. ....Drlg. 3,035 ft.
Great Eastern Oil Co.'s No. 1 C. O. Christian, 150 ft. from N line and 230 ft. from E line of lease, J. S. Whiteman Sur. ....Derrick.
Gulf Production Co.'s No. 1 J. W. Shaw, 330 ft. from S and W lines of 89.8-ac. tract, F. Cordova Sur. ....Drlg. 1,600 ft.
Hale and Hatchfield's No. 1 C. J. Goforth, 625 ft. from S line and 450 ft. from W line of 13.4-ac. tract, M. J. Pru Sur. ....Rig up and S.D.
Hathaway et al's No. 1 Gray, J. M. McLain Sur. ....S.D. 3,206 ft.
H. E. Hiden's No. 1 Varney, 100 ft. from N line, 125 ft. from E line of road, W. G. Tutt Sur. ....Derrick.
Holland et al's No. 1 S. E. Brox, 330 ft. from N line and 250 ft. from W line of 20-ac. lease, Thomas Grey Sur. ....Derrick.
Howell's No. 1 Irion and Motley, 200 ft. from N line, 1,270 ft. from W line of survey, J. Lindley Sur.....S.D. 1,600 ft.
Humble Oil & Refining Co.'s No. 1 E.W. Naulls, 330 ft. from S and W lines of 73.5-ac. tract, T. J. Martin Sur. ....Drlg. 2,624 ft.
Humble Oil & Refining Co.'s No. 1 T. Barton, 150 ft. S and 330 ft. E from NW cor. of 50.5-ac. lease, Thomas Grace Sur. ....Waiting on rig.
T. F. Hunter's No. 1 J. Johnson, 330 ft. from E line and 171 ft. from N line of 13-ac. lease, H. B. Dance Sur. ....Moving in rig.
A. W. Jones Oil Co.'s No. 1 J. M. Grant, 346 ft. from S line, 1,076 ft. from E line of 100-ac. tract, T. J. Walling Sur. ....Fishing 2,410 ft.
La. O. & R. Co.'s No. 1 Jernigan, 330 ft. from S line, 1,033 ft. from W line of 100-ac. lease, McCabe Sur...Waiting on cmt. to set 3,635 ft.
LaSalle-Davenport and Bledsoe's No. 1 Church, 175 ft. S and 175 ft. E of SE cor. of Sun-Schuler joint lease, J. B. DeCadena Sur. ....Moving in material.
Moss and Urschel's No. 1 H. L. Griffin, 200 ft. from N line and 150 ft. from W line of 20-ac. lease, Juan Ximenes Sur. ....Drlg. 3,676 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 H. C. Burton, 1,375 ft. from S line and 330 ft. from E line of 59.5-ac. lease, W. D. Porter Sur. ....Derrick.
Mid-Kansas Oil & Gas Co.'s No. 1 W. T. Grissom, 330 ft. from N line, 330 ft. from W line of lease, J. B. Brown Sur. ....Waiting on cmt. to set 3,590 ft.
Geo. L. Pace's No. 1 E. B. Alford, center of 5-ac. lease, T. J. Moore Sur. ....S.D. 1,675 ft.
Reynolds-Blankenship & Trapp's No. 1 Church lot, 200 ft. E of Tex Jersey's No. 1-A Keeling and 50 ft. SW of Hoosier's No. 1-A Neal, F. Cordova Sur. ....Drlg. 3,377 ft.
J. T. Reese's No. 1 Marshall Clay, 330 ft. from N and W line of 65-ac. lease, Juan Ximenes Sur. ....Rig up and S.D.
Ross Seward's No. 1 Burton, J. J. Y'Barbo Sur. ....Fishing 3,077 ft.
R. E. L. Silvey's No. 1 P. G. Warren, 155 ft. from S line and 96 ft. from E line of 44-ac. tract, John Womack Sur. ....Derrick.
Jay Simmons' No. 1 D. C. Joyner, 2,050 ft. from S line and 300 ft. from W line of 74.11-ac. tract, F. Cordova Sur. ....Derrick.
Sinclair Oil & Gas Co.'s No. 1 W. H. McCord, 144 ft. from N line and 330 ft. from W line of lease, J. B. DeCadena Sur. ....Drlg. 2,500 ft.
Skelly et al's No. 1 L&G.N., 1,320 ft. from E line and 660 ft. from S line of survey, J. S. Carrithers Sur. ..Rig up.

..for high pressure gas transmission

CF

Two thousand pounds pressure to the square inch can be controlled, and gas can be passed on to the main or the distributing line at reduced pressure to suit requirements, by the use of the proper C-F Regulator. Standard Regulators are designed for pressure up to 600 pounds. For higher pressures, designs are adapted according to specification.

C-F High-Pressure Regulators are in the reducing stations of practically every gas company supplying natural gas to important cities, east or west. For high or low pressures, C-F apparatus has commanded the confidence of gas engineers from the beginning of the industry. Correspondence is invited. Catalogs are mailed on request.

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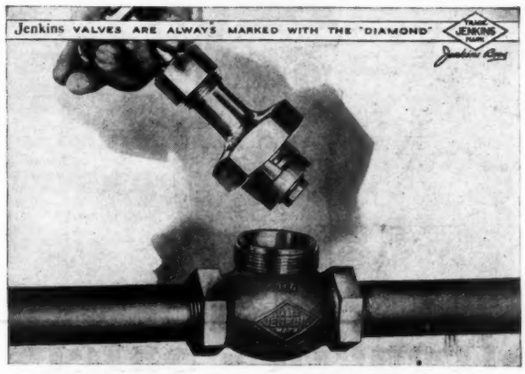

FIG. 106-A Jenkins Standard Bronze Globe Valve, Screwed. For 150 lbs. steam or 250 lbs. water working pressure. Special features such as a one-piece screw-over bonnet and slip-on stay-on disc holder obtainable also in angle, cross, and check patterns.

DISC HOLDER slips on or off *but won't fall off*

TO renew the disc in a Fig. 106-A Jenkins Standard Bronze Globe Valve is a simple matter that takes only a few moments. Slip the disc holder containing the old disc off the spindle. Slip on a new disc holder containing the disc, and the job is done. Before the bonnet is removed the spindle need be given just an opening turn or so and the bonnet and trim can be removed. YET THE DISC HOLDER CANNOT FALL OFF. Jenkins Bros., 80 White St., New York, N. Y.; 510 Main St., Bridgeport, Conn.; 524 Atlantic Ave., Boston, Mass.; 133 North 7th Street, Philadelphia, Pa.; 646 Washington Boulevard, Chicago, Ill.; 1121 North San Jacinto, Houston, Texas.

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BRONZE IRON STEEL
VALVES
Since 1864

PIPING by Power Piping
FOR EVERY INDUSTRIAL NEED

Correct design and fabrication of the piping may mean the difference between costly maintenance and economical upkeep. Our engineers have a background of experience and skill to provide expert service. That is the reason why leaders in industry *"put it up to Power Piping."*

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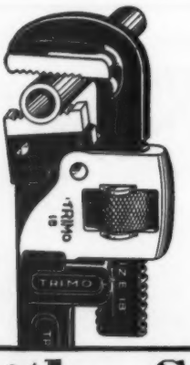

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TRIMO's leadership in the oil fields is based on no trick claims, no flash in the pan wave of popularity.

Strength and safety have made TRIMO first choice. The handle is drop forged not cast — and heat treating gives the extra toughness to stand terrific strain.

TRIMO is made throughout by a company pledged for over forty years to fine tool making.

TRIMONT MFG. CO., INC., Roxbury (Boston), Mass.

TRIMO

TRIMO
Pipe Wrench

The Texas Company's No. 1 W. W. Henry, 330 ft. from S and E lines of 229-ac. tract ..... Drlg. 3,614 ft.
M. L. Thompson's No. 1 Price, Hugh Million Sur. ..... S.D. 3,280 ft.
Weaver-Crim Corp.'s No. 1 M. E. Peterson, 330 ft. from S line and center of E and W line of lease, W. P. Chisum Sur. ..... Location.

JOINER POOL—RUSK COUNTY

Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ..... Derrick.
Paulett et al's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... Bailed dry after small show of gas; T.D. 1,313 ft.

SAN AUGUSTINE COUNTY

A. H. Jones and Tennant's No. 1 A. P. Davis ..... T.D. 2,472 ft.
Smith and Baker's No. 1 Pickering Lbr. Co., 6 miles N of San Augustine, E. Quick Sur. ..... Derrick.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ..... S.D. 3,440 ft.
Joiner et al's No. 1 Clayton Brown, 1,300 ft. from E and 400 ft. from most northerly S line of V. Evans Sur. . S.D. 2,250 ft.

UPSHUR COUNTY

L. G. Bradstreet et al's No. 1 O. M. Victory, 330 ft. from N and E lines of 10-ac. lease, E. A. J. Evans Sur. ..... Location.
E. & D. Oil Co.'s No. 1 J. W. Free, 200 ft. N and 394 ft. W of SE cor. 20.5-ac. Free tract ..... Drlg. 3,374 ft.
Falvey et al's No. 1 S. D. Rodden, 227 ft. from N line and 330 ft. from E line of 20-ac. lease, M. Mann Sur. ..... Rigging up.
Eslick et al's No. 1 H. F. Whitehurst, 330 ft. out of SW cor. of 5.80 acres of W 40 acres of Whitehurst 100-ac. tract ..... Rigging up.
Gillett-Tarr and Potter's No. 1 D. A. Irion, 330 ft. from N line and center of E and W line of tract, D. A. Lucas Sur. ..... Coring 3,863 ft.
Saturn Oil Co.'s No. 1 W. F. Smith, 330 ft. from E line and center of N and S lines of S 25 acres of W 50 acres of 100-ac. tract, J. Pineda Sur. ..... Drlg. 3,658 ft.
Jackson and Bradstreet's No. 1 Victory, center of 25-ac. lease, E. A. J. Evans Sur. ..... Waiting on cmt. to set 3,585 ft.
L. E. Trout et al's No. 1 O. M. Victory, 330 ft. from S and E lines of 60-ac. lease, E. A. J. Evans Sur. ... Derrick.
Wolf's No. 1 Cook, center of 115-ac. tract in Jacob Walker Sur., 5 miles W of Rosewood ..... S.D. 1,100 ft.
Wood and Nelson's No. 1 H. S. Coslett, 500 ft. N and W of SE cor. of Coslett 2.48-ac. tract, B. F. Howard Sur. ..... Drlg. 1,550 ft.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tract, 3½ miles S of Canton, M. J. DeCadena Sur. ..... S.D. 2,104 ft.
Kelly O. & G. Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ..... S.D. 2,300 ft.
Thomasson, Inc.'s No. 2 W. P. Forster, 600 ft. from N and 450 ft. from E of SW cor. of Forster 151-ac. tract in the F. Montgomery Sur. ..... S.D. 3,200 ft.
Priest et al's No. 1 B. G. Beckham, 150 ft. from S line, 33 ft. from W line of 100-ac. tract, A. S. Johnson Sur.. Drlg. 5,181 ft.
Pure Oil Co.'s No. 2 Mrs. C. White, 250 ft. E of W line, 250 ft. S of N line, John Walling Sur. ..... Derrick.
Pure Oil Co.'s No. 1 D. F. Cade, 250 ft. N of S line of 45.3-ac. tract in Nacogdoches County School Land Sur. ..... Drlg. 1,300 ft.
Pure Oil Co.'s No. 1-T V. T. Davis, 400 ft. N of N line of Tunnell No. 8 lease, 480 ft. W of E line of survey, Nacogdoches County School Land Sur. ..... Set 7-in. csg.; T.D. 6,795 ft.
Pure Oil Co.'s No. 9 F. B. Smith, 1,180 ft. E of W line and 150 ft. N of S line, John Walling Sur. ..... Drlg. 2,650 ft.
Pure Oil Co.'s No. 2 J. T. Petty, 300 ft. SE of most northerly NW cor. of H. C. Gilbert lease, Nacogdoches County School Land ..... Coring 2,980 ft.
Pure Oil Co.'s No. 1 E. Morris 597 ft. N of S line and 250 ft. E of W line of lease, John Walling Sur. ..... Drlg. 1,050 ft.
Pure Oil Co.'s No. 5 Mary P. Neills et al, 200 ft. N of S line and 225 ft. W of E line of 100-ac. lease, James Ross Sur. ..... Cmt. setting 305 ft.
Pure Oil Co.'s No. 3, 225 ft. S of N line and 225 ft. W of E line, J. Stephenson Sur. ..... Location.
Pure Oil Co.'s No. 2 A. R. Humphreys, 200 ft. S of N line and 225 ft. E of W line of lease, A. McPhail Sur. ..... Rigging up.
The Texas Company's No. 1 R. V. White, 250 ft. E of W line and 200 ft. N of S line of lease, Nacogdoches County School Land ..... Drlg. 2,828 ft.
The Texas Company's No. 3 J. A. Bracken, 684 ft. S of N line and 250 ft. E of W line of lease, John Walling Sur. ..... Drlg. 2,065 ft.
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... S.D. 2,850 ft.

WOOD COUNTY

Talko Oil Co.'s No. 1 G. T. Ross, B. L. Smith Sur..... S. D. 1,550 ft.
Wood County Dev. Co.'s No. 1 Davis, approximately 180 ft. from S line of 160-ac. tract and 2½ miles S of Kantes in Sarah McDonald Sur. ..... Moving in rig.
Yankee Oil Co.'s No. 1 Davis, 330 ft. from S of NW cor. of M. Ryan, Jr., Sur. ..... Drlg. 3,200 ft.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 30)

FISHER COUNTY

Cranfill & Reynolds' No. 1 George, 400 ft. from N and 380 ft. from E, Sec. 200, Blk. 1, B.B.B.&C. Sur..... Drlg. by tools 3,815 ft.
Southern Oil Corp. of America's No. 1 Wm. Flannigan, 240 ft. from E and 165 ft. from W line of S 20 acres of SW, Sec. 20, B.B.B.&C.R.R. Sur. ..... Drlg. 2,010 ft.

GLASSCOCK COUNTY

Mann et al's No. 1 fee, 330 ft. from N and 1,980 ft. from E, Sec. 27, Blk. 34, Twp. 3s, T.&P. Sur. ..... Drlg. 550 ft.

GARZA COUNTY

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,680 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... Fishing for 6⅝-in. csg.; T.D. 3,320 ft.

HOWARD COUNTY

American-Maracaibo's No. 5-A Settles, 1,896 ft. from N, 1,884 ft. from W, Sec. 6, Blk. 32, T.&P. Sur. ..... Location.
Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W, Sec. 14, Blk. 29, Twp. 1s, T.&P. Sur.. Spudded and S.D.
L. C. Harrison et al's No. 1 L. C. Denman, 2,310 ft. from S line and 330 ft. from E line of Sec. 10, T.&P.R.R. Sur., Blk. 30 ..... T.P. 2,735 ft.; shot 300 qts. 2,727-2,807 ft.; running tubing.
Wallace et al's No. 1 Bell, 1,960 ft. from N, 2,640 ft. from W, Sec. 12, Blk. 30-1s, T.&P. Sur. ..... Location.

IRION COUNTY

Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W, Sec. 3,081, Blk. 28, H.&T.C. Sur. ..... Drlg. 5,960 ft.
Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... Drlg. 7,040 ft.
Straughn & Adkins Bros.' No. 1 Lee, 1,080 ft. from W and 420 ft. from N of Sec. 729, C. Kaiser Sur..... T.D. 1,347 ft.; underreaming.

JONES COUNTY

Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 18, T.&P. Sur.....Rig up.
Grove & Shield's No. 1 Toomas, 1,140 ft. from N and 220 ft. from E Sec. 25, Blk. 19, T.&P. Sur. .....Location.
Young et al's No. 1 Harrell, 150 ft. from S and E of N half of Sec. 8, O.A.L. Sur. .....Location.
Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 43.4-acre tract in G. Martinez Sur.....S.D. 1,005 ft.; temp. abnd.

LOVING COUNTY

Wm. Little's No. 1 Hugo Freels, 1,923 ft. from NE lines and 410 ft. from NW lines of Sec. 92, W.&N.W. Sur., Blk. 1 .....Rigging up.
Adams et al's No. 1 Wheat, 330 ft. from SE and SW of Sec. 89, Blk. 1, W.&N.W. Sur. .....Drlg. 3,325 ft.
Eppenauer Drlg. Co.'s No. 1 Allen, 465 ft. from NE and SE, Sec. 4, Blk. 2, W.&N.W. Sur. .....Location.
Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S, Sec. 46, Blk. 53, T.&P. Sur. .....S. D. 810 ft.
Slack's No. 1 Lynd, 990 ft. NE and 330 ft. SE of Sec. 3, Blk. 2, W.&N.W. Sur. .....T.D. 4,265 ft.; 300 ft. oil in hole.
Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW, Sec. 79, Blk. 33, H.&T.C. Sur.....S.D. 2,500 ft.
Lewis & Slagel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W, Sec. 6, Blk. 56, Twp. 1, T.&P. Sur...T.D. 565 ft.; running 10-in. csg.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur.....S.D. 3,385 ft.
Phillips Pet. Co.'s No. 3 Wheat, 330 ft. from SW and 2,310 ft. from SE, Sec. 85, Blk. 1, W.&N.W. Sur.....Drlg. 2,450 ft.
Stein & Bowers' No. 1 Jim Wheat, 1,650 ft. from NW and 1,650 ft. from NE lines of Sec. 83, W.&N.W. Sur., Blk. 1 .....Location.
Tennant et al's No. 1 Martin, 990 ft. from NW and SW, Sec. 66, Blk. 1, W.&N.W. Sur. .....Cleaning out 4,335 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. .....S.D. 2,860 ft.

PECOS COUNTY

Anderson's No. 1 Lee Fever, 330 ft. from N and W of Sec. 78, Blk. 8, H.&G.N. Sur. .....S. D. 2,037 ft.
Black et al's No. 1 Pecos Valley, 1,037 ft. from SE, 433 ft. from SW, Sec. 36, Blk. 3, H.&T.C. Sur. .....Location.
Cardinal Oil Co.'s No. 1 J. H. Tippett ("J"), 1,980 ft. from the S line and 990 ft. from the W line of Sec. 2, D. F. Robertson Sur. .....S.D. 675 ft.
Corvette Oil Corp.'s No. 8 H. Monroe, 1,040 ft. from E line and 150 ft. from N line of Sec. 39, G.C.&S.F. Sur., Blk. 194 .....Location.
Culberson Bros.' No. 2-A Monroe, 575 ft. from N and 150 ft. from E, Sec. 39, Blk. 194, G.C.&S.F. Sur.....S.D. 625 ft.; 100 bbls. b.s. and water.
Hampton et al's No. 1 Byrne, 1,980 ft. from NW and 1,500 ft. from NE Sec. 54, Blk. 10, H.&G.N. Sur. ....Drlg. 250 ft.
Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 55, Blk. 10, H.&G.N. Sur.....S.D. 1,225 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,370 ft. from S and 1,000 ft. from E, Sec. 13, Blk. 2 .....T.D. 4,810 ft.; drlg. by csg. at 3,538 ft.

REEVES COUNTY

Cunningham et al's No. 1 Wright, 1,320 ft. from S and W, Sec. 68, Cassel's Sur. .....S.D. 75 ft.
F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 22, Blk. 59, P.S.L. Sur.....S.D. 105 ft.
James & Milton's No. 1 Patterson, 330 ft. from N and W of Sec. 21, Blk. 72 .....S.D. 3,360 ft.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur....S.D. 5,044 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 .....S.O. 3,427-20 ft.; S.D. 3,600 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C, Sec. 29, Blk. M, G.E.&S.A. Sur. .....Drlg. 4,875 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,302 ft. from E of Sec. 77, Blk. LL, T. C. Sur. .....Fishing 5,580 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. .....S.D. 5,053 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. .....S.D. 5,050 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W, Sec. 68, Blk. 3, H.&G.N. Sur. .....Spudded and S.D.
Seifert & Dibbie's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. .....S.D. 3,900 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M-K-T Sur. .....S.D. 2,269 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C, Sec. 6, Georgetown Ry. Sur. .....S. D. 3,150 ft.; moved off tools.
Miller Bros.' No. 1 Allison & Burke, C NW, Sec. 10, Blk. 176, T.&P. Sur. .....S.D. 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur. S.D. 6,120 ft.
Jones et al's No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. .....S.D. 2,545 ft.
Sides et al's No. 1 Phelps, 2,157 ft. from N and 2,482 ft. from W, Sec. 5, G. W. Hurley Sur. .....S.D. 855 ft.

TOM GREEN COUNTY

Andrews' No. 1 Pugh, 250 ft. from N and 9,184 ft. from E, James Eldridge Sur. No. 73 .....S.D. 453 ft.
Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 587 ft. from E of John McNeese Sur. .....S.D. 760 ft.; S.O. and gas 725 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur....S.D. 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 .....S.D. 200 ft.

VAL VERDE COUNTY

Couch et al's No. 1 J. P. Yoas, 1,300 ft. from the N line and E line of Sec. 31, Blk. 1, I.&G.N. Sur.....S.D. 220 ft.
Independent Operators' No. 1 Whitehead, SE SE, Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. .....S.D. 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. .....S.D. 6,780 ft.

WARD COUNTY

Abell Bros.' No. 1 Sloan, 330 ft. from NW and NE, Sec. 24, Blk. 5, H.&T.C. Sur. .....S.D. 2,050 ft.; show oil and gas 2,045-50 ft.
Bradford & Bentley's No. 1 B. Carson, 1,650 ft. from the NE line and 990 ft. from the SE line of Sec. 26, H.&T.C. Sur., Blk. 5 .....Rigging up.
Buck Sturm et al's No. 2 R. H. Gill, 2,310 ft. from SW line and 330 ft. from SE line, Sec. 25, Blk. B-29, P.S.L. Sur. .....Drlg. 1,415 ft.
Eppenauer's No. 1 Purcell, 365 ft. from SW and 1,650 ft. from SE of Sec. 17, Blk. 34, H.&T.C. Sur.....Drlg. 2,700 ft.
H. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW, Sec. 12, Blk. 5, H.&T.C. Sur. .....Fishing 720 ft.
Gulf Prod. Co.'s No. 10 Hutchings, 330 ft. from N and W of 5,370 acres, Sec. 5, Blk. P, G.M.M.B.&A. Sur...Location.
Gulf Prod. Co.'s No. 21 O'Brien, 2,557 ft. from N, 330 ft. from E of Sec. 16, Blk. F .....Location.
Moran & Burkhart's No. 2 J. T. Sweatt et al, 3,810 ft. from SW, Sec. 1, J. Howe Sur. .....S.D. 821 ft.
Moran & Miles' No. 1 Boogher, 3,603 feet from NE and 1,303 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. .....S.D. 610 ft.
R. F. Owen's No. 1 Lee, 1,344 ft. from NW and 4,632 ft. from SW Sec. 1, J. Howe Sur. .....S.D. 560 ft.
Plains Prod. Co. and Simms Oil Co.'s No. 1 Benton Land Co., 440 ft. from the SE and 440 ft. from SW lines of Sec. 26, W.&N.W.R.R. Sur., Blk. 1 .....Derrick.
Prairie Oil & Gas Co.'s No. 2 Edmonson, 330 ft. from NW and SW of Sec. 23, Blk. 5, H.&T.C. Sur.....S.D. 3,510 ft.; T.P. 2,420 ft.; shot 30 qts. 2,460-2,500 ft.; swabbing and cleaning out.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E, Sec. 22, Blk. A, G.M.M.B.&A. Sur. .....S.D. 3,602 ft.
Sudderth & Carey's No. 1 J. H. Boogher et al, 150 ft. from SW and SE lines of Lot 24, Sec. 11, Blk. 5, H.&T.C. Sur. .....S.D. 290 ft.
Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 .....T.D. 4,673 ft.; shot 15 qts. 4,666-4,672½ ft.; shut in.
Stanolind Oil & Gas Co.'s No. 1 Cannon, 3,300 ft. from SE and 1,649 ft. from NE, Sec. 29, Blk. B-39.....Drlg. 875 ft.
Stanolind Oil & Gas Co.'s No. 1 Weiss, 300 ft. from NW, 300 ft. from NE of S 100 acres, Sec. 4, Blk. 34.....S.D. 2,380 ft.; produced 670 bbls. in 5 days.
White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. .....S.D. 755 ft.

WINKLER COUNTY

Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor., Sec. 2, Blk. B-5 .....S.D. 4,640 ft.
Richardson's No. 1 Sealy, 330 ft. from S and W of Sec. 92, Blk. A, G.M.M.B.&A. Sur. .....Drlg. 3,125 ft.
Sid Richardson's No. 1 S. M. Halley, 330 ft. from the S line and 1,650 ft. from the E line, Sec. 25, School Blk. B-12 .....Drlg. 2,650 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 30)

Jewel Oil Co.'s No. 1 Meers, 330 ft. from S and W of NW SW, Sec. 106, Blk. 3, I.&G.N. Sur. .....Drlg. 2,855 ft., show of gas 2,748 ft; estimated 1,000,000 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. .....S.D. 2,620 ft.
Nipper et al's No. 1 Morse, 330 ft. from N and E, Sec. 1, Blk. 26, I.&G.N. Sur. .....S.D. 2,460 ft.; 5,000,000 ft. of gas 2,450-60 ft.
Operators Royalty & Prod. Co.'s No. 2 Arnold, 330 ft. from S and W, Sec. 149, Blk. 3, I.&G.N. Sur. .....Rig.
Pulse-Shell Pet. Corp.'s No. 1 Wright, 330 ft. from S and W of Sec. 13, Blk. 3, I.&G.N. Sur. .....S.D. 2,659 ft.
Prairie Oil & Gas Co.'s No. 1 Pope, 330 ft. from N and E, Sec. 173, Blk. 3, I.&G.N. .....Drlg. 616 ft.
Saunders et al's No. 2 Sullivan, 322 ft. from W and 231 ft. from NE, 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur. .....Will plug back to 3,275 ft. and shoot.
Skelly Oil Co.'s No. 24 Schaffer, 440 ft. from W, Sec. 172, Blk. 3, I.&G.N. Sur. .....Set 10-in. csg. 1,145 ft.
Skelly Oil Co.'s No. 25 Schaffer, 330 ft. from S and E, Sec. 189, Blk. 3, I.&G.N. .....Drlg. 1,030 ft.
Skelly Oil Co.'s No. 26 Schaffer, 330 ft. from S and W, Sec. 172, Blk. 3 I.&G.N. .....Rig up.
Stanolind Oil & Gas Co.'s No. 2 Waggoner, 330 ft. from N and W, Sec. 173, Blk. 3, I.&G.N. .....Moving in tools.
Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. .....Shot 160 qts. 2,802-80 ft.; T.D. 2,880 ft; fishing.
Tarber's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1, B.B.&S.F. Sur. .....Location.

HUTCHINSON COUNTY

Baso's No. 1 Moore, 330 ft. from S and 330 ft. from E, in 80 ac. in NW, Sec. 21, Blk. M-21, T.C.R.R. Sur. ..Drlg. 215 ft.
Combination O. & G. Co. and Alspaugh's No. 1 Johnson, 330 ft. from S line, 330 ft. from E line of NW SW, Sec. 4, Blk. Y, A.&B. Sur. .....Spudded.
Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE, Sec. 34, Blk. Y, A.&B. Sur. .....Spudded and S.D.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. ...S.D. 450 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. .....T.D. 3,116 ft; to plug back.
Harry Stekoll's No. 1 Whittenburg, 1,650 ft. from N, 330 ft. from E, Sec. 89, Blk. Z, G.C.&S.F. Sur. .....Drlg. 1,175 ft.
Sunburst Oil Co.'s No. 5 Smith, 660 ft. from N line, 660 ft. from W line of NW SW, Blk. Y, Sec. 14, M.&C. Sur. .....Rig up.
Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 124, Blk. 4, I.&G.N. Sur. .....Rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. .....T.D. 5,003 ft.

MOORE COUNTY

Canadian River Gas Co.'s No. 1-C Thompson, cen. of Sec., Blk. B-10, Sec. 2, E.L.R.R. Sur. .....Location.
Dogie-Oil Co.'s No. 1 Greenwald, 330 ft. from N and W, Sec. 277, Blk. 44, H.&T.C. Sur. .....Drlg. 20 ft.
Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. .....Rig up.
Magnolia Pet. Co.'s No. 1 Nield, 330 ft. from S and E of N½, Sec. 361, Blk. 44, H.&T.C. Sur. .....Drlg. 2,340 ft.
Pollard et al's No. 1 Hall, 330 ft. S and E, NE, Sec. 131, Blk. 3-T, T.&N.O. Sur. .....Rig on ground.
Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. .....Rig on ground.
Sunset Oil Co.'s No. 1 R. O. C. Brumley, 330 ft. from N line and 330 ft. from W line of SW, Sec. 360, H.&T.C. Sur. .....Location.
Texas Interstate P. L. Co.'s No. 1-23 Thompson, C N½ NE, Sec. 23, Blk. 44, H.&T.C. Sur. .....Location.
Texas Interstate P. L. Co.'s No. 1-37 Sneed, C NW, Sec. 37, Blk. 6-T, T.&N.O. Sur. .....Location.
Texhoma Nat. Gas Co.'s No. 4 Coon "M," C SE, Sec. 103, Blk. 44, T.&T.C. Sur. .....Drlg. 1,718 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. .....S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. .....S.D. 400 ft.
Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. S, G.C.&S.F. Sur. .....Drlg. 3,420 ft.

PARMER COUNTY

Magnolia Pet. Co.'s No. 1 Wilson, 330 ft. from N and W, SE, Sec. 73, H. Kelly Sur. .....Drlg. 3,424 ft.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. .....Slight show of gas; T.D. 3,320 ft.
Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-2, H.&G.N. Sur. .....S.D. 2,650 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, 330 ft. S and W, SE, Sec. 2, Blk. A-9, H.&G.N. Sur. .....S.D. 2,235 ft.
Devore & Robinson's No. 1 Sitter, 2,310 ft. from S and E of E½ of Sec. 33, Blk. 24, H.&G.N. Sur. .....Estimated 80,000,000 ft. gas; T.D. 2,263 ft.; S.D.

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Brief Items for Petroleum Refiners

Kansas Standard Plans to Provide Retail Marketing

The Standard Oil Co. (Kansas) plans to completely integrate its operations when conditions in the oil industry justify this action, according to A. S. Hopkins, president of the company. In a formal announcement to stockholders last week, in reply to a statement issued by a group of stockholders who are attempting to gain control at the annual meeting next month, Mr. Hopkins explained the legal restrictions which circumscribed the activities of the company in the past and which have been partially removed over the past two years, permitting the company to expand its operations.

Following the Standard Oil dissolution decree in 1911, the Standard of Kansas confined its operations for many years to the manufacture of refinery products located at Neodesha, Kans. In 1912 the State of Kansas, after a long court fight in which the three Standard companies were defendants, succeeded in obtaining a judgment which deprived the Standard of Kansas of the right to produce oil or sell its products at retail as the other two companies have done. According to Mr. Hopkins, the company "cannot now and could not at any time since the commence in 1912 of the company's independent management retail our products in our own name in the State of Kansas or in any other state in which such products were being marketed by another in a Standard Oil name."

Recently the Standard of Kansas has secured a modification of the original decree so that the company can market its products under another name. To place themselves in a position to carry on retail marketing when market conditions justify, the company has procured a charter for a corporation, known as the Spokan Oil Co. At present the bulk of the company's gasoline and some of its other products are sold under contract to the Standard Oil Co. (Indiana) on a tank car basis.

The company also secured a modification of the original decree to permit it to produce crude oil. Since that time it has acquired a controlling stock interest in the Tulsa Oil Co., a producing company. The company also has its own pipe gathering and transportation system.

START TOPPING PLANT

HOUSTON, Tex., Feb. 13.—The Conroe Refining Co. the past week completed and put in operation a small topping plant at Grand Lake, south of Conroe, Montgomery County. The plant has a capacity of 250 bbls. daily and is operating on the oil piped to the site from a wildcat well recently completed by Strake Oil Corp. in the Theodore Slade Survey, 4 miles distant. The oil is high gravity, consisting largely of gasoline and kerosene and only equipment for separating these two ends has been required. The company only recently was organized with A. N. Munhall as head.

INCREASE CRACKING CAPACITY

HOUSTON, Tex., Feb. 13.—Shell Petroleum Corp. expects to start actual construction before the end of the month on the new Dubbs unit and auxiliary equipment to be installed at its refinery east of Houston. Some preliminary work already is under way in clearing ground and setting up forms and equipment is to start moving in this week. This installation is a part of an extensive expansion and building program anticipated at the Houston plant.

NO IMMEDIATE PLANS TO REORGANIZE WESTERN OIL

LOS ANGELES, Calif., Feb. 12.—The financial condition of the Western Oil & Refining Co. has shown an improvement since the company was placed in receivership, but no plans have been made for the reorganization of the company, according to Frank E. Lee, general administrative agent. He said:

"While efforts have been made from time to time, nothing concrete can be reported at this time toward any reorganization plan, consolidation or merger, but the idea is ever present in the receiver's mind and as soon as general business conditions warrant it he will actively engage in some plan that will be beneficial to the creditors and stockholders."

Liabilities of the company were reduced over the period by $158,482.34 to a total of $1,506,820.69, to which is added $635,092.69 of receiver's obligations, including $330,541.35 incurred for the direct purchase of Jenkins crackers. Assets increased $581,472.20 through purchase of the crackers and by other means. Current assets increased $148,679.50.

GAS PLANTS UTILIZE LARGE VOLUME OF OIL

More than 20,000,000 bbls. of gas oil, fuel oil and lighter hydrocarbons go into the manufacture of artificial gas annually, according to the Census of Manufacturers compiled by the federal Government.

The summary shows that gas plants use more than 8,000,000 tons of coal and 20,000,000 bbls. of oil annually. In 1929 the gas-making plants consumed 68,072 long tons of anthracite and 8,917,607 short tons of bituminous coal, and their consumption of oil amounted to 20,707,660 42-gallon barrels. In addition to these materials the gas-making plants also consumed 2,471,555 short tons of coke and breeze.

For census purposes, this industry covers all establishments, both private and municipal, engaged primarily in the commercial manufacture of gas to be delivered through mains, for illuminating, household and industrial purposes. It does not include establishments which merely distribute gas not of their own manufacture. Blast furnace gas, and with a few exceptions, gas resulting from by-product coke oven operation, are not treated as products of the industry. A considerable amount of by-product coke oven gas is, however, purchased by commercial gas plants and used as an ingredient of manufactured gas.

The products of the gas industry comprise not only gas, but also the by-products resulting from its manufacture, such as coke, tar, ammonia, napthalene and light oil and its derivatives.

The total output of the 754 gas plants in 1929 amounted to 408,401,395,000 cubic feet and was valued at $438,242,970.

FALLS PLANT OPERATING

Contrary to a report appearing in the February 11 issue of The Oil and Gas Journal, the Wichita Falls, Tex., refinery of the Falls Refining Co. is not shut down. The plant has been operated continuously over the past seven years and the management expects to continue this operation indefinitely.

The Falls company is not involved in any receivership proceedings. The company owes nothing but its current bills and is amply financed to carry on its operations.

COASTAL REFINERY AT MOBILE NOW OPERATING

The refinery of the Coastal Petroleum Corp. at Mobile, Ala., the largest new plant to be built in the United States for several months, started operating last month. The plant is being operated with East Texas crude oil, the first shipment of 56,311 bbls. arriving 10 days ago from the Gulf Coast. The tanker "E. J. Nicklos" made the first delivery. Similar shipments will be made every 10 days.

The Coastal corporation, of which Victor H. Smith is president, has made arrangements with the Eastern Petroleum Corp. of Atlanta, Ga., to handle the sales of the refinery output. The plant will be operated on a basis of approximately 5,700 bbls. daily. The corporation has 300 tank cars to handle inland deliveries.

The distillation equipment consists of a combination skimming and viscosity reducing unit which was designed and installed by the J. P. Devine Manufacturing Co. The distillation unit is equipped with a tower from which three grades of gasoline and one grade of kerosene are taken simultaneously. The plant, which is located on Blakely's Island, in Mobile Bay, has a rated capacity of 6,000 bbls. daily. The plant, including accessory equipment, was built in 130 calendar days and is the first refinery to be built in Alabama and that section of the Atlantic Coast.

ARRANGE CRUDE SUPPLY FOR CASPER REFINERIES

CASPER, Wyo., Feb. 13.—The Producers & Refiners Corp. is reported to have made a deal with the White Eagle Oil & Refining Co. to deliver to the latter a part of the government royalty oil from Salt Creek for its Casper refinery, and to be negotiating with The Texas Company for a portion. Last December the Producers & Refiners was high bidder for the royalty oil, its bid being a premium of 22¼ cents per barrel over Mid-Continent posted prices. The royalty oil amounts to around 3,000 bbls. per day.

Through the splitting of the supply, the sales, if confirmed, will continue to give the two Casper refineries a source of crude oil upon which they have depended for their main supply for some time and leave an additional 1,000 bbls. per day for the Producers & Refiners refinery at Parco. The oil will be transported by the Producers & Refiners from Salt Creek to the White Eagle and Texas plants at Casper and to the refinery at Parco.

VISIT HUMBLE PLANTS

HOUSTON, Tex., Feb. 13.—A group of superintendents and technical experts of the refining division of the Standard Oil Co. of New Jersey and associated companies were in Houston Thursday and Friday on an annual inspection trip. As guests of the Humble Oil & Refining Co., of which H. C. Wiess is vice president and director in charge of refining and J. L. Finley, general superintendent, the visiting refinery men spent one day at Humble's Baytown refinery, the other day being spent in conferences and entertainment at Houston. The group came to Houston from Baton Rouge, where the plant of the Standard Oil Co. of Louisiana is located.

CONTINENTAL BUYS OUTLETS

The Continental Oil Co. has purchased the domestic marketing facilities of the Island Export Co. in Baltimore and Denton, Md., and in Washington, D. C. The Continental will operate these facilities as an outlet for its products made at its refinery near Baltimore, Md.

Two Associations of Refiners Will Hold April Meets

The annual meeting of the Western Petroleum Refiners Association and the semiannual meeting of the National Petroleum Association will both be held in April this year.

The annual meeting of the Western Petroleum Refiners Association will be held at Excelsior Springs, Mo., early in April, the exact date to be announced within a few days. Previously the annual meeting of the association has been held in March, but at the last meeting of the association the by-laws were changed to permit the annual session to be held in April when considered advisable by the board of directors. All meetings will be held at the Elms Hotel.

In addition to the meeting of company executives, the two-day annual session will provide for technical sessions at which papers will be presented and opportunity given for general discussion. President L. R. Crawford has appointed R. R. Irwin, president of the White Eagle Oil Corp., chairman of the committee which will arrange the program for the meeting.

The semiannual meeting of the National Petroleum Association will be held April 21 and 22 at the Cleveland Hotel, Cleveland, Ohio, where the meeting has been held for the past three years. A fellowship supper will be held Thursday evening. In addition to the regular program definite time will be allotted on Thursday and Friday to important committee meetings.

MOVE SMALL PLANT

LOUISVILLE, Ky., Feb. 13.—The oil refinery in Sebree, Webster County, Kentucky, is being moved from Sebree to Greenville, in Muhlenberg County. The small plant should be ready to operate in about 30 days. The refinery will be located on a farm owned by Hugh Lee on the Greenville-Kirksmansville Road, about 3 miles south of Greenville.

A contract for crude oil has been made with the H. & K. Oil Co., a concern in which several Muhlenberg County persons are interested. The H. & K. Oil Co. already has three good oil wells, all in shallow pay sand, about 800 feet, on the Lee farm, and expects to drill others in the near future. Production from the new refinery will be sold from tank trucks to automobile service stations in western Kentucky, and the plant will be able to handle and use 100 bbls of crude oil daily.

H. E. Eaves, Sr., H. E. Eaves, Jr., and B. L. Andrews, Greenville, and George L. Hill, Weir, are interested in the new enterprise.

SELL SULLIVAN REFINERY

The refinery erected in 1926 at Dayton, N. M., by Sullivan Refineries, Inc., was sold last week at a foreclosure sale at Artesia. It was bid in for $3,500 by J. H. Jackson, attorney for Sherwin Williams & Co. and R. A. Shugart. The bid about covered the preferred claims. It is reported that the plant will be torn down and moved away.

BUILD SMALL PLANT

Arthur R. Vrooman and Shirley H. Vrooman have completed a 50-bbl. skimming plant at Orchard in the Greasewood Pool of Colorado and have made test runs. It will be operated under the name of the Greasewood Refining Co. It is reported that it will operate on royalty oil from the Greasewood Pool.

Manufacture of Natural Gasoline

Gulf Production Co. East Texas Plant Nearing Completion

Construction work on the Gulf Production Co.'s natural gasoline plant near London, Rusk County, in the East Texas Field, is nearing completion and gathering lines are being extended into the field to supply gas to the plant. Six compressors will be included in the plant and a revision in the conventional method of plant design and operation will permit the complete absorption and stabilization of the gasoline as well as provide gas for subsequent production operations or for delivery of the gas to fuel lines.

The absorber tower will operate under 250 pounds pressure and this will permit recovery of all pentanes and heavier. The enriched oil will be pumped over a second tower where it is contacted with the hot, compressed incoming gas at about 150 pounds pressure. A portion of the raw gas is absorbed at the time it gives up heat to the enriched oil but the bulk of it is compressed to a higher pressure as it leaves the stabilizer tower after which it enters the absorber for more complete liquefaction. This principle has been used in but a few plants previously and will be used for the first time in the East Texas Field by the Gulf Production Co.

Much of the equipment used in assembling the East Texas plant was reclaimed from nonoperating units at other Gulf and Gypsy gasoline plants in Texas and Oklahoma. Construction work on the East Texas plant was started about a month ago.

At present 25 miles of gas lines are being laid, and included in the work are 6½ miles of 16-inch spiral welded pipe.

SEVEN GASOLINE PLANTS IN EAST TEXAS FIELD

H. H. Adams of Fort Worth, is moving a casinghead gasoline plant from Santa Anna in Coleman County, Texas, to Kilgore where it will operate on gas from wells in that area. Several Kilgore men are interested in the plant, which has a capacity of 15,000 gallons per day. Glenn A. Griffin will be plant superintendent. This will be the seventh gasoline plant to be constructed in the district, the Humble Oil & Refining Co. having one at London and one at Kilgore; the Lisbon Gasoline Co. having one in the southern end of the Joiner Pool, Rusk County; Arkansas Fuel Oil Co. building one in the Lathrop area, Gregg County, another under construction at Gladewater; and the Gulf Production Co.'s plant under construction near London.

RANGER OPERATORS TO MEET MARCH 29

The annual meeting of natural gasoline operators in the Ranger, Tex., district will be held in the American Legion Hall in Ranger March 29. The committee in charge of the program expects to announce the names of the speakers and the subjects of their papers at an early date. The committee is composed of D. B. Hiatt of the Texas Pacific Coal & Oil Co., chairman, Harry Wheeldon of the Lone Star Gasoline Co., and E. Buddrus of the Phillips Petroleum Co. In past years these meetnigs have been well attended by operators in the Ranger district and many from other fields took advantage of the practical discussions by attending.

GASOLINE STOCKS SHOW SLIGHT INCREASE CLOSE OF DECEMBER

The production of natural gasoline, after increasing during October and November, fell off in December, when the total output amounted to 146,000,000 gallons, a daily average of 4,710,000 gallons. The majority of the producing fields showed comparatively little change in output in December. Production continued to gain in the eastern states. The largest decline in output in December occurred in the Seminole Field. Stocks of natural gasoline held at the plants showed comparatively little change during the month; the total on hand December 31, 1931, amounted to 27,070,000 gallons, compared with 26,924,000 gallons on hand at the beginning of the month. The following data are expressed in thousands of gallons.

	Natural gasoline						Blended motor fuel, Dec., 1931		
	Production				Stocks end of month		Nat- ural gaso- line used	Naphtha or other oils used	Stocks end of month
	Dec., 1931	Nov., 1931	Dec., 1930	Jan.-Dec., 1931	Dec., 1931	Nov., 1931			
Appalachian	7,300	6,100	8,400	73,300	2,328	2,203	69	81	191
Ill., Ky., Ind.	1,100	900	1,300	10,000	372	256	...	...	...
Oklahoma	37,400	36,900	42,500	443,400	8,785	7,071	55	89	60
Oklahoma City	7,600	6,100	3,800	50,000	1,756	803	...	...	...
Osage County	4,600	4,900	6,300	63,000	1,692	1,204	2	...	10
Seminole	11,700	12,700	16,400	161,100	2,338	2,447	4	2	...
Rest of State	13,500	13,200	16,000	169,300	2,999	2,617	49	87	50
Kansas	2,500	2,400	2,900	29,800	428	414	18	1	16
Texas	33,700	33,000	43,000	426,000	6,005	8,070	26	156	23
Panhandle	16,800	16,400	22,200	209,600	1,753	1,847	...	.	...
North Texas	2,500	2,600	3,800	36,200	803	1,002	...	...	...
West Central	8,700	8,600	12,100	118,600	2,710	2,445	26	156	23
Rest of State	5,700	5,400	4,900	62,200	739	2,775	...	...	...
Louisiana	4,700	4,900	4,900	53,900	1,238	1,008	20	8	8
Arkansas	1,700	1,900	2,500	26,700	202	237	22	20	8
Rocky Mountain	5,800	5,700	6,100	68,600	655	692	...	...	...
California	51,800	51,200	67,900	672,300	7,056	6,972	...	...	...
Huntington Beach	1,500	1,500	2,300	20,900	.....	.....	.	...	...
Kettleman Hills	14,100	13,600	15,300	170,200	.....	.....	...	.	...
Long Beach	9,600	9,600	14,700	134,100	.....	.....	...	...	.
Santa Fe Springs	9,100	9,200	14,600	121,900	.....	.....	.	...	...
Ventura Avenue	4,400	4,100	5,900	54,100	.....	...	...	...	...
Rest of State	13,100	13,200	15,100	171,100	.....	.....	...	...	...
Total	146,000	143,000	179,400	1,804,600	27,070	26,924	210	355	306
Daily average	4,710	4,770	5,790	4,940	.....	.....	7	11	10
Total (thousands of barrels)	3,476	3,405	4,271	42,966	645	641	5	8	7
Daily average	112	114	138	118	.....	.....	...	...	...

SALE OF LIQUEFIED GASES 58 PER CENT MORE IN 1931 THAN 1930

An increase of nearly 10,500,000 gallons, representing a gain over 1930 sales of 58 per cent, brought the 1931 marketed production of liquefied petroleum gases to a total of 28,502,819 gallons, according to the U. S. Bureau of Mines, Department of Commerce, following the completion of a survey of 1931 operations by E. B. Swanson, chief petroleum economist. The 1931 increase exceeded that recorded for 1930, when marketed production was approximately 8,000,000 gallons higher than in the preceding year.

In two previous surveys, the Bureau of Mines has reported the quantities marketed annually from 1922 to 1930, inclusive, thus giving, with the 1931 survey, a complete record of the marketed production of these gases.

MARKETED PRODUCTION OF LIQUEFIED PETROLEUM GASES, 1922-1931

Year—	Gallons
1922	222,641
1923	276,863
1924	376,488
1925	403,674
1926	465,085
1927	1,091,605
1928	4,522,899
1929	9,930,964
1930	18,017,347
1931	28,502,849

An approximate segregation of the gases marketed indicates that the 1931 distribution of propane was about 15,000,000 gallons, as compared with 11,500,000 gallons in 1930 and that the distribution of butane, pentane and mixtures of these gases more than doubled, being about 13,500,000 gallons in 1931, as compared with 6,500,000 gallons in 1930.

Information assembled in the survey shows that shipments made in cylinders and drums totaled approximately 14,000,000 gallons, while bulk shipments were slightly more than 14,500,000 gallons. Bulk shipments were made by tank truck or car and by pipe line. Some portion of these bulk shipments was used by distributors in filling their own cylinders for local distribution.

Marketed production in the Pacific Coast states, reported by four companies, totaled 5,056,362 gallons, while the marketed production east of the Rocky Mountains, reported by 10 companies, totaled 23,446,457 gallons.

Segregation of the 1931 marketed production, according to the three principal types of use, showed that 54 per cent was marketed for domestic uses; 24 per cent for industrial and miscellaneous purposes; and 22 per cent for gas manufacturing, either as a raw material for gas manufacture or as an enriching agent.

SEGREGATION BY USES OF 1931 MARKETED PRODUCTION

Use—	Gallons	Pct.
Domestic	15,294,648	53.7
Gas manufacturing	6,184,655	21.7
Industrial and miscellaneous	7,023,516	24.6
Total	28,502,819	100.0

Propane is a gas at atmospheric pressure at such temperatures as may ordinarily be met with, but may be liquefied under moderate pressure and transported in cylinders, drums or other special containers. It is selfvaporizing at temperatures above minus 44° F. and is the principal constituent of the liquefied gas, commonly designated as "bottled gas," used in the individual installations in homes, clubs, boats and other places unconnected with a central gas supply. It is estimated that approximately 150,000 "bottled gas" customers were served during 1931, as compared with 117,000 during 1930, 55,000 in 1929 and 20,000 in 1928. An average consumption of approximately 100 gallons per installation was indicated.

Pure butane is not ordinarily used in "bottled gas" service, as temperatures frequently may be too low to permit the necessary selfvaporization. Butane, consequently, finds its principal market in the industrial fields. The outstanding development in the use of butane has been its application to gas manufacture in central stations in communities too small to support a gas service of the ordinary manufactured type or the distribution of natural gas. In the more common type of central station, butane is mixed with air in determined proportions. Such plants commonly are known as "butane-air gas plants." Some plants, however, distribute undiluted propane. This type of distribution appears to have developed through the experience gained in distributing propane to small groups of houses from a single station.

Through the American Gas Association it was learned that 118 communities in 28 states were supplied with liquefied petroleum gas by 59 companies at the close of 1931. Undiluted gas was distributed in 24 communities by seven companies, the remainder being butane-air plants. One butane-air plant was reported operating in Canada. In comparison with installations in operation at the beginning of the year, when 59 plants were reported, an even 100 per cent growth is indicated.

Several companies reported an extension of marketing territory during the year. New developments reported include the employment of liquefied petroleum gases in cotton singeing and the use of liquefied petroleum gas as a fuel and refrigerant for motor trucks designed for the transport of perishable commodities.

Four companies began producing and marketing liquefied petroleum gases during 1931, bringing the total number to 14, one company previously producing having reported no 1931 production. A list of these producers may be obtained by writing the Petroleum Economics Division, U. S. Bureau of Mines, Washington, D. C.

THE TEXAS CO. FILES SUIT IN CALIFORNIA

LOS ANGELES, Calif., Feb. 12.—In one of the most voluminous complaints filed in Superior Courts in many years, The Texas Company yesterday brought action against the Milham Exploration Co., the Kettleman North Dome Association and the Western States Gasoline Corp., involving $20,248,838.75.

Basis of the suit is the plaintiff's contention that a contract entered into with the defendants on June 24, 1927, has been violated. The suit asks for declaratory relief, accounting and injunction to restrain the defendants from further asserted breach of contract, and appointment of a receiver, or $20,248,838.75 damages.

Under the purported agreement, The Texas Company was to take gasoline from wet gas from the No. 1 Elliott well, in Kettleman Hills, with agreement that the company and the defendants share on a 50-50 basis. It is contended that the defendants did not deliver all the wet gas to The Texas Company, in keeping with the agreement, after The Texas Company had spent about $200,000 in constructing a plant near the well.

TENTATIVE RULES FOR EAST TEXAS FIELD

(Continued from Page 13)

be taken care of from a separate riser than the one used for traps and flow tanks.

11. All townsite wells, or wells on school lots, shall be cleaned through the gun barrel or separator into the stock tanks.

12. All wells shall be cleaned into a pit not less than 40 feet from the derrick floor and 150 feet from any other fire hazard. This rule holds, except in cases covered by Rule 13.

13. The gas-oil ratio shall not exceed 500 feet of gas per barrel of oil.

14. The operator shall turn in his gas measurement, along with his regular, daily production report, at least twice a month. The gas measurement shall be by wells where possible.

15. All flowing wells shall be equipped with and produced through tubing of not more than two and one-half (2½") inches in diameter. Bottom of tubing shall not be higher than one joint of top of producing sand. If the tubing is perforated, the perforations shall not extend above the top of the sand.

16. All wells shall be equipped with adequate chokes, or beans, to properly permit the taking of allowable production.

17. All wells producing 2 per cent salt water must be reported to the Railroad Commission office. These wells shall be plugged back until the top of the sand is 10 feet above the water table. When this is not possible, the well shall be allowed a maximum of 3 feet of producing sand above the top of the plug.

18. All wells encountering the top of the producing sand at minus 3,300 feet, or lower, shall be allowed a maximum saturated sand penetration of 4 feet. Wells encountering the producing sand at a point higher than minus 3,300 feet shall be allowed a maximum penetration of two-thirds (⅔) of the distance from the top of the sand to the water table.

19. No air or gas lift artificially applied, in its ordinary form, shall be used. Special permission may, in the discretion of the commission, be granted for the use of special devices for lifting oil using air or gas lift in such forms as will not be injurious to the producing sand. Such devices shall be used in the manner prescribed by the commission or its duly accredited representatives.

20. No boiler or electric lighting generator shall be placed, or remain, nearer than 150 feet to any producing well or oil tank.

21. All wells shall be completed in the daylight hours before sunset.

22. All permanent oil tanks, or batteries of tanks, must be surrounded by a dyke or fire wall of at least the capacity of the tank or battery of tanks.

23. No well shall be brought into production without a written permit from an authorized agent of the commission, showing that the well has been properly completed and equipped. If inspection is not made within 24 hours after written notice is given said agent, written permit shall be waived.

24. All purchasers, pipe lines and/or carriers of crude petroleum, shall equip their gathering lines from field storage tanks with lock-stops. New ball seals with name or initial of gathering or purchasing company, numbered consecutively, shall be attached to each stop-cock after each run of oil.

25. Any rubbish, or debris, that might constitute a fire hazard, shall be removed to a distance of at least 100 feet from the vicinity of wells, tanks and pump stations. All waste oil shall be burned or disposed of in such manner as to avoid creating a fire hazard or poluting streams and fresh water strata.

26. All wells having a total depth within 10 feet of the current water table as determined by the Railroad Commission, shall be required to produce at a rate not exceeding 20 bbls. per hour.

Those filing appearances when the East Texas oil proration and conservation hearing opened included:

W. C. Spooner, William C. Leisk, R. G. Hughes, E. L. Coster, Shreveport, La.

Clark Sample, Dr. J. C. Falvey, R. J. McMurray, W. D. Glasscock, Frank C. Condron, Longview.

William E. Hunter, George D. Bevel, C. Andrade III; J. O. Fox, Claude C. Wild, manager of the Independent Petroleum Association; F. J. Wetzel, Dallas.

J. S. Rushing, El Dorado, Ark.

J. A. Bracken, W. E. McKinney, Mr. and Mrs. J. K. Wells, Roy Nichols, Tyler.

A. M. Donoghue, D. S. Kelly, C. S. Thomas, W. W. Scott, John R. Suman, H. D. Wilde, Jr., J. A. Neath, George A. Hill, Jr., C. H. Hardison, Houston.

C. E. Nelson, San Antonio.

Bryan W. Payne, Myron G. Blalock, Marshall.

E. L. Smith, Mexia; Joiner Cartwright, Beaumont; N. T. Gilbert, A. M. Gee, Tulsa, Okla.; L. H. Simpson, Mexia; W. D. Kinney, Henderson.

R. E. Hardwicke, Charles F. Roeser, E. V. Foran, Paul A. McDermott, Arch H. Rowan, Fort Worth.

R. C. Lamar, Beaumont.

SHARKEY LAW IS THE ONLY TANGIBLE HOPE

(Continued from Page 13)

proration or curtailment on a voluntary basis cannot be relied upon. Foolish selfishness on the part of a few has invariably defeated the constructive efforts of the majority. The helpful influence of the State is necessary.

Sharkey Bill

I have given careful study to the Sharkey conservation bill (Senate Bill No. 362), a measure designed to stop overproduction and waste of crude oil. The adoption and enforcement of the proposed law would be in the interest of the public and of the petroleum industry. It seems to me that the Sharkey bill is the only tangible hope available to stop the drift towards disintegration of capital investment of companies operating exclusively in the older producing fields of the State.

The Sharkey bill directs the Oil Conservation Commission, in allocating oil production among the different fields, and the different zones, properties and wells in the different fields, so as to avoid discrimination, to take into consideration:

"The extent of the respective fields, zones and properties, the relative accessible oil reserves at the time of allocation, the stage of development of each field or zone, the potential production of the wells, the size and condition of the wells, the quantity of the oil produced from each field or zone and the demand therefor."

The duty of the commissioner is to investigate and report. He has no authority to make conclusive findings of fact, much less to enter orders enforceable against producers of oil. After approval by the director of natural resources, the bill contains provisions against removal of oil produced in violation of the order and for surcharging prohibited production after a court in equity on the complaint of the director of natural resources has made and entered an injunction determining the rights to produce. Experience has not developed a tribunal more capable of adjusting conflicting property rights than a court of equity with the right of appeal reserved, including the writ of supersedeas, as will exist in cases under this bill.

It is my opinion that the enactment of this law would prevent prices of petroleum products from going to extreme high levels and present unremunerative prices would be replaced by reasonable prices. I recommend and urge the adoption of the Sharkey bill.

Receiverships

The unusually large number of oil companies in receivership with their disregard of the necessity of proration adds tremendously to the difficulties of reputable, responsible companies, in producing and marketing petroleum products.

An examination of the records of the Federal District Court of Los Angeles shows that one-third of the total number of existing receiverships "in equity" in that court are for corporations engaged in producing, refining or marketing oil.

The total liabilities of the 51 oil companies under receivership are given as in excess of $82,000,000. Most of the receiverships are being conducted at a loss, very few being able to show any profit whatever from operations. As a matter of fact, only three of the 51 companies have made any payments to the creditors; in one instance 40 per cent, in another 10 per cent, and in the other 6 per cent have been paid. A substantial portion of these companies are hopelessly insolvent. In order to obtain desired funds, receivers (and also trustees in bankruptcy) have produced in excess of allotment under voluntary curtailment, and have sold the production for as low as 8 cents a barrel. Gasoline stocks have been thrown on the market at prices less than the cost of production. These practices are not only harmful to business generally, but because of the extraordinary competitive conditions are constantly adding other companies to the list of insolvents.

In addition to the receiverships in equity mentioned above, there are a large number of oil companies—townlot operators in the Venice and Signal Hill Fields— which have been declared bankrupt and are being operated by trustees elected by the creditors. Little need be said of the excessive cost of receivership management and its fruitful source of profit to receivers and their legal representatives.

In many instances receivership management results in improper operation and abandonment of wells resulting in the dissipation or waste of reserve. With the Sharkey bill in effect, it would be proper to refer a legal order of proration to the court with the request that the receiver be instructed to operate in accordance with such order. The present demoralized condition of the industry is due, to a large extent, to the production from properties under receivership management.

Gasoline Taxes

The petroleum industry favors a reasonable gasoline tax. Reputable companies may be relied upon to assist the State in the collection of the tax. However, the amount has reached such large proportions of the selling price as to lead to evasions by various methods. Improvement has been noticed since the enactment of the law in 1931, but the delinquent gasoline tax on January 1, 1932, amounted to more than $2,000,000, which, of course, does not include evasions.

There is a widespread conviction in the oil industry that gas tax evasion exists on a large scale. Owing to the character of the product, it is easy to smuggle gasoline from refineries to tank trucks, etc., with the policing problem a very difficult one.

The importance of the situation is indicated by the amount of the tax assessed for the calendar year 1931, $41,625,000, or approximately 30 per cent of the total revenues of the State.

The evasion of gasoline taxes has become a national disgrace. For the purpose of assisting the several states, the American Petroleum Institute is putting into effect a national plan which contemplates the appointment of committees in each state. The committee will be composed of men with intimate knowledge of the intricacies of the oil business. It is not the intention of the American Petroleum Institute or its committees to usurp the power or duties of the several state agencies. It is hoped, however, that the several agencies of the State will permit the committees to cooperate and assist in the enforcement of the law to the end that all companies and persons may be assessed on the same equitable basis. May I suggest that you call the attention of the several departments to the desire of the committee, and ask that they co-operate with it.

Filling Stations

The overexpansion of the filling stations throughout the State and indeed throughout the entire United States, is regrettable. The policy of the several companies and individuals has apparently disregarded sound business judgment and brought about justified adverse criticism. Under existing laws it is extremely difficult to control or correct the situation. It is suggested that a law be enacted requiring a license to build additional stations and that such license be not granted except where it is shown to be a public necessity.

Conclusion

As stated, petroleum is the largest basic industry in the State. Competitive conditions and unethical practices have resulted in unremunerative prices. The buying power of the industry has been cut in half. Thousands of employes are deprived of their income and hundreds of thousands of stockholders and those indirectly concerned are adversely affected by prevailing conditions. The maintenance of reasonable prices is the first requisite to the recovery of conditions. Equitable proration as contemplated in the Sharkey bill will assist in the correction of present conditions.

Respectfully submitted,

(Signed) E. B. REESER.

THE OIL MAN'S CALENDAR

February

22—Greensburg, Pa., Western Pennsylvania Petroleum Marketers Association, Penn Albert Hotel.

23-25—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

March

7-8—Cleveland, Ohio, Committee D-2.

7-11—Cleveland, Ohio, American Society for Testing Materials.

10—Los Angeles, Calif., annual banquet, California Oil and Gas Association.

14-18—New Orleans, La., American Chemical Society.

21-27—Los Angeles, Calf., third annual Oil Equipment and Engineering Exposition.

23-25—Detroit, Mich., Michigan Oil Men's Association, Statler Hotel.

24-26—Oklahoma City, Okla., American Association of Petroleum Geologists.

28-Apr. 1—New Orleans, La., American Chemical Society.

April

2-10—Detroit, Mich., National Aircraft Show.

6-8—Birmingham, Ala., Distribution Committee, Technical Section, American Gas Association.

11-16—Boston, Mass., ninth annual convention, American Oil Burner Association.

21-22—Cleveland, Ohio, semiannual meeting, National Petroleum Association.

22-24—Dallas, Tex., Petroleum Industry Electrical Association, Baker Hotel.

27-29—White Sulphur Springs, W. Va., National Pipe and Supplies Association, Greenbrier Hotel.

May

4-6—Honolulu, Hawaii, National Foreign Trade Council.

9-11—Tulsa, Okla., Natural Gas Department, American Gas Association.

9-13—Atlantic City, N. J., National Fire Protection Association.

17-19—Tulsa, Okla., Natural Gasoline Association of America, Mayo Hotel.

June

1-3—Tulsa, Okla., mid-year meetings, American Petroleum Institute, Mayo Hotel.

6-9—Detroit, Mich., National Association of Purchasing Agents.

20-24—Atlantic City, N. J., American Society for Testing Materials.

September

14-16—Atlantic City, N. J., Annual meeting, National Petroleum Association.

November

15-17—Houston, Tex., Annual meeting, American Petroleum Institute.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINES

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
*U. S. Motor	.02⅞	.03⅛	.02¾	.03
60-62 400	.03⅛	.03¼	.03	.03¼
64-66 390	.03⅜	.03½	.03¼	.03½
64-66 375	.03⅝	.03⅞	.03⅜	.03⅞
68-70 350	.03¾	.04	.03¾	.04
NORTH TEXAS—				
*U. S. Motor	.03		.02¾	.03
60-62 400	.03⅛	.03¼	.03⅛	.03¼
64-66 390	.03⅜	.03½	.03⅜	.03½
64-66 375	.03⅝	.03⅞	.03⅝	.03¾
64-66 360	.03¾	.04	.03¾	.04
‡NORTH LOUISIANA—				
*U. S. Motor	.03½	.03¾	.03½	.03¾
60-62 400	.03¾		.03¾	
‡ARKANSAS—				
*U. S. Motor	.03¼	.03½	.03¼	.03½
CHICAGO Based on Okla (Group 3)—				
*U. S. Motor	.02¾	.03	.02¾	.03
60-62 400	.03	.03¼	.03⅛	.03⅜
64-66 375	.03⅝	.04	.03¾	.04
Aviation fighting grade	.04½	.05	.04¾	.05¼
68-70 360	.04	.04¼	.04⅛	.04⅜

Octane Ratings—Above quotations cover price ranges on gasolines in which no octane rating is given. In the case of the U. S. Motor and 60-62 400 endpoint grades where an octane rating of 57-65, inclusive, is guaranteed, prices are one-half cent per gallon higher than quotations shown in above tables; where an octane rating of 65 or higher is guaranteed, the prices are three-fourths cent higher. In the case of the remaining grades, gasolines of 65 octane rating or higher are quoted one-fourth cent higher than the quotations shown in above tables. Unless otherwise provided by agreement of buyers and sellers, the Series 30 testing equipment of the Ethyl Gasoline Corp. is recognized as standard in determining octane ratings.

*Present distillation specifications on U. S. Motor gasoline are: 10 per cent evaporated, 167° F. maximum; 50 per cent, 284° F. maximum; 90 per cent, 392° F. maximum; residue not exceeding 2 per cent; maximum vapor pressure, 12 pounds. Additional specification on U. S. Motor gasoline available from bulletins of Bureau of Mines, Washington, D. C.

‡For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.04	.04⅛	.04	.04¼
60-62 400	.04⅜	.04⅝	.04½	.04¾
64-66 375	.04⅝	.05	.04¾	.05
68-70 350	.05½		.05½	

Octane Ratings—In the case of U. S. Motor and 60-62 400 endpoint grades, same price differentials based on octane ratings as shown in above tables for Oklahoma and other Mid-Continent areas.

CALIFORNIA (domestic movement only)—				
54-58 U. S. Motor	.04½	.05	.04¾	.05¼
58-60 400	.05	.05½	.05½	.06
NEW YORK (Bayonne, N. J.)—				
U. S. Motor, below 65 octane number	.05¾		.05¾	
U. S. Motor, min. 65 octane	.06½		.06½	

NAPHTHAS

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
50-52 450 (blending)	.02¾	.03	.02¾	
PENNSYLVANIA—				
50-54 430-450 (blending)	.04		.04	
ARKANSAS—				
48-50 450 (blending)	.03		.03	
CHICAGO Based on Okla. (Group 3)—				
50-52 450 (blending)	.02¾	.02⅞	.02¾	.02⅞
Cleaners' naphtha, 56-58 gr. 200 i.b.p.-320 e.p.	.05⅝	.05⅞	.05⅝	.05⅞
Lacquer diluent, 180 i.b.p.-250 e.p.	.09	.09¼	.09	.09¼
Lacquer diluent, 140 i.b.p.-200 e.p.	.09	.09¼	.09	.09¼
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05¾	.06¼	.05¾	.06¼
Stoddard solvent, 300 i.b.p.-410 e.p., over 100° flash	.04⅞	.05⅛	.04⅞	.05⅛
Pet. thinner, 290, 300 i.b.p.-415 e.p., over 83° flash	.04⅜	.04⅝	.04⅜	.04⅝
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05¼	.05½	.05¼	.05½
Petroleum spirits	.03⅞	.04¼	.03⅞	.04¼

NATURAL GASOLINES

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
Grade 18-55	.01⅞	.02⅛	.02	.02⅛
Grade 26-70	.01⅝	.01½	.01½	.01⅝
Grade 30-70	.01¼		.01⅜	
NORTH TEXAS—				
Grade 18-55	.01⅞	.02	.02	.02⅛
Grade 26-70	.01⅝		.01½	
Grade 30-70	.01¼		.01⅜	
NORTH LOUISIANA—				
Grade 26-70	.01¾		.01¾	
CALIFORNIA—				
75-78 375	.04¼	.05	.04½	.05¼

Note—Grades 18-55, 26-70 and 30-70 are three of 24 grades adopted by the Natural Gasoline Association of America effective January 1. The grades are based on pounds vapor pressure and amount evaporated at 140° F. See page 74 of January 7 issue for explanation of new grading system. While not exactly the same specifications apply, Grade 18-55 corresponds to the former A, Grade 26-70 to former Grade AA and 30-70 to former Grade BB.

KEROSENES

(All kerosenes water white)

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
41-43	.02⅝	.02¾	.02⅝	.02¾
42-44	.02¾	.02⅞	.02¾	.02⅞
NORTH TEXAS—				
40-41	.02⅝		.02⅝	
41-43	.02¾		.02¾	
‡NORTH LOUISIANA—				
41-43	.03	.03¼	.03	.03¼
42-44	.03¼	.03⅜	.03¼	.03⅜
‡ARKANSAS—				
41-43	.03	.03¼	.03	.03¼
PENNSYLVANIA—				
45	.04⅛	.04¼	.04¼	.04⅜
46	.04½	.04⅝	.04½	.04⅝
47	.04⅝	.04⅞	.04⅝	.04¾
CHICAGO (Based on Group 3)—				
41-43	.02½	.02⅝	.02½	.02⅝
42-44	.02⅝	.02¾	.02⅝	.02⅞
***CALIFORNIA—**				
38-40 high burning test	.03¾	.04½	.04	.05
NEW YORK (Bayonne, N. J.)—				
41-43	.05½	.05¾	.05½	.05¾

*For Pacific Coast consumption.
‡For Arkansas, Louisiana and Mississippi delivery.

TRACTOR FUELS*

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
39-41 prime white	.02¼		.02¼	
38-40 light straw	.02	.02⅛	.02	.02⅛
NORTH TEXAS—				
38-40 light straw	.02	.02⅛	.02	.02⅛
CHICAGO (Basis Group 3)—				
38-40 light straw	.02⅛	.02¼	.02⅛	.02¼
PENNSYLVANIA—				
41-43 prime white	.04⅛	.04¼	.04¼	

*There are no standard specifications for tractor fuels. Grades commonly sold have flash under 175° F. (open cup) and under 575° F. endpoint and less than .2 per cent sulphur. Tractor fuels are available from all Mid-Continent refining groups at prices in line with the Oklahoma market taking into consideration differentials in freight rates.

FURNACE OILS*

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
32-36 straw	.01¾	.01⅞	.01¾	.01⅞
36-38 straw	.01⅞	.02	.01⅞	.02
38-40 straw	.02	.02¼	.02	.02⅛
39-41 prime white	.02⅛	.02¼	.02⅛	.02¼
NORTH TEXAS—				
38-40 straw	.02⅛	.02¼	.02⅛	.02¼
‡NORTH LOUISIANA—				
36-40	.02¼	.02½	.02¼	.02½
‡ARKANSAS—				
32-36	.02	.02¼	.02	.02¼
CHICAGO (Basis Group 3)—				
32-36 straw	.01¾	.02	.01¾	.02⅛
38-40 straw	.02	.02⅛	.02⅛	.02¼
PENNSYLVANIA—				
40-41 prime white	.03½		.03½	
NEW YORK (Bayonne, N. J.)—				
32-36	.03½		.03½	
36-40	.03¾		.03¾	

*Above prices are for furnace oils of zero cold test, under 190° F. flash and good odor.
‡For Arkansas, Louisiana and Mississippi delivery.

GAS OIL, DIESEL OIL AND FUEL OIL

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
32-36 (G.O.) cracking stock	.01	.01⅛	.01⅛	.01¼
U.G.I. (G.O.)	.01	.01⅛	.01⅛	.01¼
32-36, zero to 15 (G.O.)	.01¼	.01⅜	.01¼	.01⅜
28-30, zero to 10	.45	.50	.45	.50
26-30, zero to 10	.40	.50	.40	.50
24-26	.35	.40	.35	.40
20-22	.25	.30	.25	.30
16-20	.22½	.27½	.22½	.25
Below 16	.22½	.25	.20	.25
NORTH TEXAS—				
32-36 (G.O.) industrial	.01⅛		.01⅛	
22-26	.40	.45	.40	.45
Below 20	.30	.35	.30	.35
‡NORTH LOUISIANA—				
30-32 (G.O.) zero	.02	.02¼	.02	.02¼
18-22	.30	.40	.30	.40
‡ARKANSAS—				
28-32 (G.O.) zero	.50	.60	.50	.60
16-20	.40	.45	.40	.45
CHICAGO (Basis Group 3)—				
32-36 (G.O.) industrial	.01⅛	.01¼	.01¼	.01⅜
28-30 (zero)	.55	.60	.50	.60
22-26	.32½	.37½	.32½	.37½
18-22	.25	.30	.25	.30
Below 18	.20	.25	.20	.25

Note—Fuel oils of more than 40 cold test generally 5 to 10 cents per barrel less in all areas than shown in above tables.

‡For Louisiana, Arkansas and Mississippi delivery.

CALIFORNIA—				
30-34 (G.O.) per bbl.	.85	1.00	.85	1.00
27 plus Diesel	.80	.90	.80	.95
15-19 bunker (at tidewater)	.60	.80	.60	.80
15-19 bunker (cargo lots)	.55	.75	.55	.75
15-19 (tank cars)	.45	.75	.40	.75
GULF COAST—				
28-30 (G.O.)	.02½	.02¾	.02½	.02¾
Bunker C (cargo lots)	.40	.50	.40	.50
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.03½	.04	.03½	.04
*28-30 Diesel	1.30		1.30	
†Bunker C	.60		.60	

*Lighterage 6½ cents per barrel.
†Lighterage 5 cents per barrel.

PETROLEUM COKE*

Prices per ton f.o.b. refineries in Chicago area.

	Feb. 16		Feb. 9	
Breeze (screenings)	3.75		3.75	
Still run	4.75		4.75	
Lump and egg	7.00	7.50	7.00	7.50

*Refiners will absorb freight up to 80 cents a ton.

NEUTRAL OILS

(Viscosity at 100° F., and Color)

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
Zero to 10 Cold Test:				
150-3	.06¼	.06½	.06¼	.06½
180-3	.07½	.07⅝	.07½	.07⅝
180-4	.07	.07¼	.07	.07¼
200-3	.08½		.08½	
200-4	.08	.08¼	.08	.08¼
240-3	.09¾	.10	.09¾	.10
240-4	.09¼	.09½	.09¼	.09½
280-3	.11¼	.11½	.11¼	.11½
280-4	.10¼	.10½	.10¼	.10½
300-3.5	.11¾	.12	.11¾	.12
350-3.5	.12¼	.12½	.12¼	.12½
400-4	.12¾	.13	.12¾	.13
500-4.5	.13¼	.13½	.13¼	.13½
100-2 Paraffin Oil	.04¼	.04½	.04¼	.04½
15-30 Cold Test:				
200-3	.07¾	.08	.07¾	.08
200-4	.07½	.07¾	.07½	.07¾
240-3	.09¼	.09½	.09¼	.09½
240-4	.08¾	.09	.08¾	.09
280-3	.10¾	.11	.10¾	.11
280-4	.09¾	.10	.09¾	.10
PENNSYLVANIA—				
Viscosity at 70° F., and Color:				
150-3	.13	.13½	.13	.13½
180-3	.16	.17	.16	.17
200-3	.18	.18½	.18	.18¼
220-3	.21	.21½	.20½	.21
36 Miners Neutral	.05½		.05½	
34 Neutral	.05½		.05½	
34 Sundebloom Neutral	.05		.05	
GULF COAST—				
Pale Oils:				
100-2-2½	.05	.05½	.05	.05½
200-3	.07	.07½	.07	.07½
300-3	.07¾	.08	.07¾	.08
500-3½	.09	.09½	.09	.09½
750-3½	.10	.10¼	.10	.10¼
1,200-3½	.12	.12¼	.12	.12¼
2,000-4	.14	.14½	.14	.14½
Red Oils:				
200-5-6	.06	.06¼	.06	.06¼
300-5-6	.06¾	.07	.06¾	.07
500-5-6	.08	.08¼	.08	.08¼
1,200-5-6	.11	.11¼	.11	.11¼
2,000-6 plus	.13	.13¼	.13	.13¼
CALIFORNIA—				
130-2½-3	.08¼	.08¾	.08¼	.08¾
200-2½-3	.09¼	.10¼	.09¼	.10¼
300-3-3½	.10¼	.11¼	.10¼	.11¼
350-3½-4	.11¼	.12	.11¼	.12
450-3½-4	.12	.12¾	.12	.12¾
550-3½-4	.12¾	.13¾	.12¾	.13¾
200-4½-5	.09¾		.09¼	.10¼
300-5-6	.10½	.11	.10½	.11
400-5-6	.11½	.12½	.11½	.12½
500-5-6	.12¾	.13½	.12¾	.13½
600-5-6½	.13½	.14¼	.13½	.14¼
700-6½ plus	.14½	.15¼	.14½	.15¼
NEW YORK (Bayonne, N. J.)—				
Paraffin Oil:				
25 pale	.10¼		.10¼	
28 pale	.07¼		.07¼	
280 red	.12½		.12½	
250 red	.11½		.11½	
225 red	.10		.10	
200 red	.09¼		.09¼	

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

BRIGHT STOCKS AND STEAM REFINED STOCKS

OKLAHOMA (Group 3)—	Feb. 16		Feb. 9	
600 light green S.R.	.04	.06	.04	.06
600 dark green S.R.	.03	.04½	.03	.04½
Bright Stock:				
190-200 D	.18½		.18½	
150-160 D, 0-10	.16	.16½	.16½	
150-160 D, 10-25	.15½	.16	.16	
150-160 D, 25-40	.15	.15½	.15½	
150-160 E	.15		.15	.15½
PENNSYLVANIA—				
600 S.R.	.11	.12	.11	.11½
650 S.R.	.14¼	.14½	.13¾	.14
600 Pennsylvania flash	.15	.16	.15	.16
600 E filtered	.14	.15	.14	.15
600 D filtered	.18	.18½	.17½	.18
Pennsylvania Grade Bright Stock:				
10-15 pour test	.23		.21	.23
25-30 pour test	.20½	.21	.19½	.20
35 and above	.20	.20½	.19	.19½

WAX AND PETROLATUM

(Prices per pound)

OKLAHOMA (Group 3)—	Feb. 16	Feb. 9	
124-126 white crude scale	.01¾	.01⅝	.01¾
PENNSYLVANIA—			
At New York:			
122-124	.02⅛	.02⅛	
124-126	.02⅛	.02⅛	
NEW YORK (Bayonne, N. J.)—			
Refined Wax:			
120-122	.02⅝	.02⅝	
125-127	.02⅞	.02⅞	
130-132	.03⅛	.03⅛	
133-135	.03¾	.03¾	
135-137	.04⅛	.04⅛	
Petrolatum in barrels in carload lots:			
Dark green	.01¾	.01¾	
Amber	.02¼	.02¼	
Extra amber	.02⅝	.02⅝	
Cream	.04¾	.04¾	
Lily white	.05¾	.05¾	
Snow white	.06¾	.06¾	

EXPORT PRICES

GASOLINE

GULF COAST—	Feb. 16	Feb.9
U. S. Motor	.04½	.04½
60-62 400 endpoint	.04⅝	.04⅝
61-63 390 endpoint	.04⅝	.04⅝
64-66 375 endpoint	.04¾	.04¾
LOS ANGELES, CALIF.—		
U. S. Motor, 53-55 437 e.p.	.04	.04½ .04 .04½
U. S. Motor, 65 octane num.	.05	.05
U. S. Motor, 67 octane num.	.05¼	.05¼
U. S. Motor, 69 octane num.	.05½	.05½
58-62 400 endpoint gasoline	.04½	.04½

KEROSENE

GULF COAST—		
41-43 prime white	.04¼	.04¼
41 water white	.04½	.04½
LOS ANGELES, CALIF.—		
41-43 water white	.04 .04¾	.04 .04¾

LUBRICANTS

NEW YORK (Bayonne, N. J.)—				
600, steam refined cylinder stocks, in bbls.	.19	.20	.19	.20
650, steam refined	.22½	.23	.22½	.23
600, Pennsylvania flash	.23	.24	.23	.24
630, Pennsylvania flash	.26	.27	.26	.27
600, Warren E	.22½	.23	.22½	.23
600, Oil City E	.21½	.22	.21½	.22
Light 140-150 Bright Stocks	.27	.28	.27	.28
Dark 140-150 Bright Stocks	.26	.27	.26	.27

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO. OF CALIFORNIA

For its current purchases of crude oil at the well (unless otherwise specified) the allowable crude oil produced in accordance with allocations made by the California Statewide Curtailment Committee. All gravities above those quoted take highest price offered in that field. Effective June 1? 1931 at 7 a.m.

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Olinda-Brea, Canon	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	$.65	$.65	...	$.55	$.55
15-15.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
16-16.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
17-17.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
18-18.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
19-19.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
20-20.9	.65	.65	.65	.66	.66	.65	.65	.65	...	.55	.55
21-21.9	.65	.65	.65	.68	.67	.65	.66	.65	...	.55	.57
22-22.9	.65	.65	.66	.70	.68	.66	.68	.65	...	.56	.59
23-23.9	.67	.67	.68	.72	.70	.67	.70	.66	...	.58	.60
24-24.9	.69	.69	.70	.74	.72	.68	.72	.67	$.65	.61	.62
25-25.9	.71	.71	.72	.76	.74	.70	.74	.69	.65	.64	.64
26-26.9	.73	.73	.74	...	.76	...	...	.71	.65	.66	.65
27-27.9	.75	.75	.76	...	.78	...	...	.73	.68	.68	.67
28-28.9	.77	...	...	...	.80	...	...	.75	.71	.71	.69
29-29.9	.79	...	...	...	...	...	...	.77	.73	.74	.71
30-30.9	.81	...	...	...	...	...	...	.79	.75	.76	.73
31-31.9	...	...	...	...	...	...	...	...	.78	...	...
32-32.9	...	...	...	...	...	...	...	...	.80	...	...
33-33.9	...	...	...	...	...	...	...	...	.83	...	...
34-34.9	...	...	...	...	...	...	...	...	.85	...	...
35-35.9	...	...	...	...	...	...	...	...	.87	...	...

Standard Oil Co. of California prices in other fields:

Wheeler Ridge—55 cents per barrel for all grades (14° to 25.9°).

Coalinga—55 cents for all grades from 14° to 24-24.9°; 57 cents for 25 gravity.

Newhall, McKittrick and Kern River—55 cents for all grades (14° to 19.9°).

Montebello—65 cents for all grades (14° to 25.9°).

Whittier and LaHabra—65 cents for all grades (14° to 22.9°).

Elwood Terrace, f.o.b. ship—33° to 33.9°, 79 cents; 34° to 34.9°, 81 cents; 35° to 35.9°, 84 cents; 36° and above, 87 cents.

Playa Del Rey—Prices subject to field gathering charge of 5 cents per barrel—19° to 19.9°, 65 cents; 20° to 20.9°, 65 cents; 21° to 21.9°, 66 cents; 22° to 22.9°, 67 cents; 23° to 23.9°, 68 cents; 24° to 24.9°, 67 cents; 25° and above, 68 cents.

(Continued on Page 86)

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas (Nov. 2, 1931)†.....$ .83
Corsicana heavy (Nov. 2, 1931)*..... .49
Other fields.....See gravity table

†Posted by Panola Pipe Line Co., Magnolia Petroleum Co., Tidal Refining Co., Sinclair Refining Co., Gulf Pipe Line Co., Atlas Pipe Line Co. *Magnolia Petroleum Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective December 16, 1931)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) $1.85
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.55
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia) 1.45
Penna Grade Oil in Buckeye Pipe Line Lines 1.25
Corning Grade Oil in Buckeye Pipe Line Co.'s line (Nov. 9, 1931) ..... .85
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 10, 1931) ... .60
Wayne district Oil in Cumberland Pipe Lines (April 23, 1931) 1.17

Tide Water Pipe Co.
(Effective December 16, 1931)

Bradford, Pa. $1.85
Allegany, N. Y. 1.85

Pure Oil Co.
(Effective December 16, 1931)

Cabin Creek, W. Va. $1.45
Bradford Hollow, W. Va. 1.45
Kelly's Creek, W. Va. 1.45

Pennzoil Co.
(Effective December 16, 1931)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.80
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B $1.79
Includes Titusville district.
Group C $1.78
Includes Turkey and Tidiout districts.
Group D $1.77
Includes Bear Creek and Porkey districts.
Group E $1.75
Includes Eidenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.
Price depends on length of pipe line haul to plant at Oil City.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties....See gravity table

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Iles, light (Aug. 24, 1931) .....$ .75
Iles, heavy (Aug. 24, 1931) ..... .53
Fort Collins (Nov. 2, 1931) ..... .71
Florence (Nov. 2, 1931) ..... .65
Wellington (Nov. 3, 1931) ..... .61
Dutton Creek (Nov. 3, 1931) ..... .75
Rock Creek, Wyo. (Nov. 3, 1931) ..... .85
Frannie, light (Nov. 3, 1931) ..... .61
Frannie, heavy (Nov. 3, 1931) ..... .51
Salt Creek.....Mid-Continent gravity table
Big Muddy (Nov. 3, 1931) ..... .83
Grass Creek (Nov. 3, 1931) 1.05
Elk Basin (Nov. 3, 1931) 1.05
Lance Creek (Aug. 24, 1931) 1.05
Poison Spider (Mar. 5, 1931) ..... .70
Notches (Mar. 14, 1927) ..... .65
Hudson (June 2, 1931) ..... .65
Lander (Mar. 5, 1931) ..... .40
Rex Lake (Feb. 22, 1930) 1.10
Osage (Apr. 15, 1931) ..... .98
Lost Soldier (Nov. 3, 1931) ..... .69
Hamilton Dome (Nov. 3, 1931) ..... .45
Greybull (Nov. 3, 1931) 1.05
Cat Creek (Nov. 3, 1931) 1.05
Pondera (Nov. 3, 1931) ..... .90
Sunburst, Mont. (Nov. 3, 1931) 1.00
Hogback, N. Mex. (Aug. 24, 1931) .... .80
Lea County, N. Mex. (Nov. 3, 1931).. .50
Border, Mont. 1.55
Red Coulee, Alberta 1.55
Dry Creek, Mont. (Aug. 24, 1931) 1.00
Maljamar (Aug. 22, 1931) 1.00
Artesia-Jackson (Nov. 3, 1931) ..... .50

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro Oil & Refining Co.

(Continued on Page 78)

CRUDE OIL GRAVITY TABLE

Gravity	1 Kansas and Oklahoma	2 North and Central Texas	3 East Central Texas	4 Gray County, Texas	5 Carson and Hutchinson Counties, Texas	6 Salt Creek, Wyo.	7 North Louisiana and Arkansas	8 Gulf Coast (Tex. and La.)	9 Cameron Meadows, La.
Below 25 degrees	...	...	...	...	...	...	...	$.70	$.60
25-25.9 degrees	...	...	...	...	...	...	...	.71	.60
26-26.9 degrees	...	...	...	...	...	...	...	.72	.61
27-27.9 degrees	...	...	...	...	...	...	...	.73	.62
28-28.9 degrees	...	...	...	...	...	...	...	.74	.63
Below 29 degrees	$.61	$.61	$.61	...	...	$.61	$.61	...	...
29-29.9 degrees	.63	.63	.63	...	...	.63	.63	.75	.64
30-30.9 degrees	.65	.65	.65	...	...	.65	.65	.76	.65
31-31.9 degrees	.67	.67	.67	...	...	.67	.67	.77	.66
32-32.9 degrees	.69	.69	.69	...	...	.69	.69	.78	.67
33-33.9 degrees	.71	.71	.71	...	...	.71	.71	.79	.68
34-34.9 degrees	.73	.73	.73	$.61	$.56	.73	.73	.80	.69
35-35.9 degrees	.75	.75	.75	.63	.58	.75	.75	.81	.70
36-36.9 degrees	.77	.77	.77	.65	.60	.77	.77	.82	.71
37-37.9 degrees	.79	.79	.79	.67	.62	.79	.79	.83	.72
38-38.9 degrees	.81	.81	.81	.69	.64	.79	.81	.84	.73
39-39.9 degrees	.83	.83	.83	.71	.66	.79	.83	.85	.74
40 degrees and over	.85	.85	.85	.73	.68	.79	.85	.86	.75

Column 1—Led by Continental Oil Co. effective November 2, 1931, and adopted on same day by other companies excepting Magnolia Petroleum Co. and White Eagle Oil Corp. and excepting that Carter Oil Co., Gypsy Oil Co., and Pure Oil Co. started their schedule at below 25 degrees, 53 cents; 25 degrees, 55 cents; with 2 cents added for each degree upward to 40 degrees and above at 85 cents. Magnolia Petroleum Co. adopted the price schedule in Oklahoma on January 8, 1932, and the White Eagle Oil Corp. in Kansas on January 1, 1932, on oil from 29 degrees upward, but posted 52 cents for oil below 28 gravity and 54 cents for 28 gravity.

Column 2—Led by Continental Oil Co. effective November 2, 1931, and followed by other purchasers on same day excepting Magnolia Petroleum Co. which met the prices on January 8, 1932, from 29 degrees upward, posting 52 cents for oil below 28 degrees and 54 cents for 28 gravity oil.

Column 3—Humble Oil & Refining Co. on November 2, and by other buyers excepting Magnolia Petroleum Co., which met the prices from 29 degrees upward on January 8, 1932, but posted 52 cents for oil below 28 degrees and 54 cents for 28 gravity oil.

Column 4—Led by The Texas Company, November 2, followed by Humble Oil & Refining Co., Gulf Pipe Line Co. and H. F. Wilcox Oil & Gas Co. same day. Magnolia Petroleum Co., January 8, 1932.

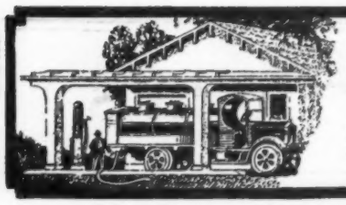
Column 5—Led by The Texas Company, November 2, followed on same day by Humble Oil & Refining Co. and Gulf Pipe Line Co. Magnolia Petroleum Co., January 8, 1932.

Column 6—Midwest Refining Co., November 2.

Column 7—Standard Oil Co. of Louisiana, November 4, 1931; The Texas Company, Gulf Refining Co. and Louisiana Oil Refining Co. same day. Magnolia Petroleum Co., January 8, 1932.

Column 8—Led by The Texas Company, November 2, followed on same day by Humble Oil & Refining Co., Vacuum Oil Co., Gulf Pipe Line Co. and Sun Oil Co., but two last named companies' schedules stop at 35 degrees and above at 81 cents, and the Sinclair Refining Co., but latter company's schedule stops at 31 degrees and above at 71 cents. Magnolia Petroleum Co. applied this schedule to Lockport and Iowa, La.

Column 9—Magnolia Petroleum Co., January 8, 1932.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Feb. 17

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Chicago	15.0	15.0	3.0	9.0
Decatur, Ill.	15.5	15.5	3.0	9.1
E. St. Louis	14.8	14.8	3.0	8.3
Joliet	15.5	15.5	3.0	9.1
Peoria	15.5	15.5	3.0	9.1
Quincy	15.3	15.3	3.0	8.9
Davenport, Ia.	15.6	15.6	3.0	9.4
Des Moines	15.6	15.6	3.0	8.1
Keokuk	15.6	15.6	3.0	6.4
Sioux City	15.2	15.2	3.0	9.0
Duluth, Minn.	16.6	16.6	3.0	10.0
Mankato	16.2	16.2	3.0	8.1
Minneapolis	16.3	16.3	3.0	10.0
LaCrosse, Wis.	17.3	17.3	4.0	10.1
Milwaukee	16.2	16.2	4.0	9.0
Madison	16.4	16.4	4.0	9.2
Detroit, Mich.	14.5	14.5	3.0	9.1
Grand Rapids	15.3	15.3	3.0	10.7
Saginaw	13.2	13.2	3.0	10.9
Evansville, Ind.	16.2	16.2	4.0	10.0
Indianapolis	16.4	16.4	4.0	10.2
South Bend	16.5	16.5	4.0	8.1
Fargo, N. D.	18.0	18.0	3.0	12.0
Huron, S. D.	17.4	17.4	4.0	10.8
Sioux Falls	16.9	16.9	4.0	10.5
K. C., Mo.	15.0	15.0	3.0	7.9
Springfield*	15.0	15.0	3.0	8.6
St. Louis*	14.0	14.0	2.5	8.4
St. Joseph	14.6	14.6	3.0	7.6
Wichita, Kans.	13.9	13.9	3.0	6.1
Bartlesville, Ok.	13.1	15.1	4.0	7.1

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 1½ cents or more below the price on the regular grade.

Effective November 4—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective January 1—Discounts on Q.D.A. on 500 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Dallas, Tex.	15.0	16.0	4.0	9.00
Fort Worth	15.0	16.0	4.0	8.0
Houston	13.0	15.0	4.0	9.0
San Anotnio	14.0	16.0	4.0	8.0
El Paso	12.0	14.0	4.0	11.0
Texarkana	*16.0	16.0	4.0	9.0
Muskogee, Ok.	11.0	13.0	4.0	7.0
Okla. City	13.0	15.0	4.0	7.0
Tulsa	13.0	15.0	4.0	8.0
Ft. Smith, Ark.	*17.0	17.0	5.0	*11.0
Little Rock	*18.0	18.0	6.0	9.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

*Less 2 cents to dealers.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Denver, Colo.	12.0	15.0	4.0	12.5
Pueblo	12.0	15.0	4.0	12.0
Grand Jctn.	18.0	21.0	4.0	14.5
Casper, Wyo.	15.0	18.0	4.0	10.0
Cheyenne	11.0	14.0	4.0	11.5
Butte, Mont.	17.0	20.0	5.0	16.0
Billings	20.0	23.0	5.0	14.5
Great Falls	21.0	23.0	5.0	16.0
Helena	20.0	23.0	5.0	16.0
Salt Lake, Utah	17.5	20.5	4.0	16.0
Albu'que, N. M.	17.0	20.0	6.0	14.0
Boise, Idaho	21.0	24.0	5.0	18.0
Twin Falls*	21.0	24.0	5.0	18.0

*3½-cent discount off tank wagon to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Ohio points	15.5	16.0	4.0	*12.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13 cents.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Pittsburgh, Pa.	15.0	16.0	3.0	11.0
Philadelphia	14.0	15.0	3.0	11.0
Scranton	15.0	16.0	3.0	11.0
Allentown	15.0	16.0	3.0	11.0
Altoona	15.0	16.0	3.0	11.0
Erie	15.0	16.0	3.0	11.0
Dover, Del.	15.0	16.0	3.0	11.0
Wilmington	15.0	16.0	3.0	11.0
Springf'd, Mass.	15.5	16.5	3.0	8.5
Worcester	15.3	16.3	3.0	8.5
Boston	14.5	15.5	3.0	9.5
Providence, R.I.	13.5	14.5	3.0	8.5
Hartford, Conn.	14.5	15.5	3.0	10.0
New Haven	14.6	15.6	3.0	10.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlanta, Ga.*	19.5	19.5	6.0	9.0
Augusta	20.0	21.0	6.0	14.0
Macon	20.0	20.0	6.0	12.0
Savannah	19.0	19.0	6.0	11.0
Birm'ham, Ala.	20.5	20.5	6.0	10.0
Mobile	20.0	20.0	6.0	10.0
Montgomery	21.5	21.5	6.0	13.5
Jackson, Miss.	16.0	17.0	5.5	11.5
Vicksburg	18.0	16.5	5.5	8.0
Jack'ville, Fla.	19.0	19.0	7.0	11.0
Miami	21.0	22.0	7.0	13.0
Pensacola	20.0	20.0	7.0	13.0
Tampa	19.0	19.0	7.0	12.0
Lex'ington, Ky.	17.0	18.0	5.0	10.0
Covington	16.0	17.0	5.0	12.0
Louisville	15.0	16.0	5.0	10.0
Corbin	18.0	19.0	5.0	15.0

A third grade "Kyso Green" is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents. To Mobile state tax add 1-cent city tax and 2½ cents county tax.

Effective April 2 price to dealers 3 cents under posted tank wagon price.

*An additional discount of 1 cent is offered to dealers effective October 6.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atl'tic City, N.J.	15.7	16.7	3.0	11.5
Newark	14.7	15.7	3.0	10.5
Annapolis, Md.	16.2	17.2	4.0	10.0
Baltimore	15.4	16.4	4.0	8.0
Cum'erland	17.2	18.2	4.0	12.0
Wash'g'n, D.C.	13.9	14.9	2.0	10.0
Danville, Va.	18.0	19.0	5.0	11.8
Norfolk	16.5	17.5	5.0	10.2
Petersburg	17.5	18.5	5.0	11.3
Richmond	16.5	17.5	5.0	10.7
Roanoke	18.2	19.2	5.0	12.0
Charles'n, W.Va.	16.7	17.7	4.0	11.5
Parkersburg	15.4	16.4	4.0	10.2
Wheeling	16.6	17.6	4.0	11.4
Charlotte, N. C.	16.0	17.0	6.0	10.7
Hickory	19.8	20.8	6.0	12.6
Mt. Airy	19.7	20.7	6.0	12.5
Raleigh	19.4	20.4	6.0	12.2
Salisbury	19.7	20.7	6.0	12.5
Charleston, S.C.	17.5	18.5	6.0	10.3
Columbia	19.4	20.4	6.0	12.2
Spartanburg	19.7	20.7	6.0	12.5

Two cents per gallon discount off retail tank wagon price of gasoline to dealers except Washington, D. C., and States of Maryland and New Jersey, where discount is 3 cents.

Prices shown above are for standard gasoline.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero
	Tank wagon	Service station	Incl'ds tax	tank wagon
Albany, N. Y.	16.6	17.6	2.0	15.6
New York*	12.3	14.3	2.0	14.3
Buffalo	15.8	15.8	2.0	14.8
Rochester	16.0	16.0	2.0	14.0
Syracuse	16.8	16.8	2.0	14.8
Boston, Mass.	16.5	16.5	3.0	13.5
Augusta, Me.	18.8	18.8	4.0	14.8
Manch'tr, N. H.	18.4	18.4	4.0	14.0
Burlington, Vt.	19.3	19.3	4.0	15.3

*Prices in steel barrels.

PACIFIC COAST TERRITORY

Standard Oil Co. of California*

	Gasoline			Kero.
	Tank truck	Posted retail	Incl'ds tax	tank wagon
Fresno	12.5	16.5	3.0	17.0
San Francisco	12.5	16.5	3.0	16.5
Los Angeles	12.0	16.0	3.0	15.5
Reno, Nev.	16.0	20.0	4.0	19.0
Portland, Ore.	14.0	18.0	4.0	16.5
Seattle, Wash.	15.0	19.0	5.0	16.5
Tacoma	15.0	19.0	5.0	16.5
Spokane	18.5	22.5	5.0	20.5
Phoenix, Ariz.	14.5	17.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
N. Orleans, La.	16.0	16.0	6.0	10.0
Baton Rouge	17.0	17.0	5.0	12.0
Alexandria†	16.0	16.0	6.0	12.0
Lafayette*	18.0	18.0	6.0	12.0
Lake Charles*	16.5	16.5	6.0	12.0
Shreveport	17.0	17.0	5.0	12.0
Knoxville, Tenn.	21.5	21.5	7.0	13.5
Memphis	17.5	17.5	7.0	11.0
Chattanooga	20.0	21.0	7.0	11.0
Nashville	20.0	20.5	7.0	12.5
Bristol	20.0	20.0	7.0	14.0
Lt. Rock, Ark.	18.0	18.0	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Omaha	14.9	15.9	4.0	9.25
McCook	17.0	17.0	4.0	7.5
Norfolk	16.75	17.75	4.0	9.75
N. Platte	17.75	18.75	4.0	10.50
Scottsbluff	17.0	17.0	4.0	9.0

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	10.7	6.23
V.M.P. naphtha	12.7	7.73
Cleaners' naphtha	15.2	9.23
Stanisol	15.2	9.23

Tank wagon prices f.o.b. Chicago January 6, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

STANOLIND FURNACE OIL IN CHICAGO

Effective July 1, prices f.ob. Chicago, tank wagon prices: 1 to 99 gallons, 8 cents; 100 gallons or more, 6 cents.

Stanolex Fuel

Effective May 9, f.o.b. Chicago, tank wagon prices: 1 to 199 gallons, 7 cents; 200 gallons or more, 5 cents. Sinclair met this by bringing down the price of its No. 3.

Fuel Oils

Chicago tank wagon prices (in lots of 400 gallons and over): 38-40 straw distillate, 6 cents; 32-36 gas oil (light zero), 5.5 cents; 32-36 gas oil (industrial), 5.25 cents; 28-30 zero fuel oil, 5 cents; 24-26 fuel oil, 4.25 cents; 18-22 fuel oil, 3.75 cents.

TANK WAGON CHANGES

Magnolia Petroleum Co. effective January 22 advanced kerosene tank wagon price 1 cent in Texas; effective January 9 the company advanced the kerosene tank wagon price 1 cent at Muskogee; effective January 29 the company reduced the gasoline tank wagon and service station prices 1 cent at Houston, Tex.; effective December 31 reduced gasoline tank wagon and service station prices 2 cents in Oklahoma; effective December 31 reduced gasoline tank wagon one-half cent and service station 1 cent at Fort Smith, Ark., and gasoline tank wagon one-half cent at Little Rock; ef-

(Continued on Page 88)

CRUDE OIL PRICES

(Continued from Page 77)

WEST TEXAS

Iatan and Westbrook	Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Ector, Winkler and Pecos Counties*	$ .50
Lea County, N. Mex.‡	.50
Toborg, Pecos County, Aug. 25, 1931†	.31

*The Texas Company, November 2, 1931; Magnolia Petroleum Co., Humble Oil & Refining Co., Gulf Pipe Line Co., same day. †Shell Petroleum Corp. ‡Humble Oil & Refining Co., The Texas Company, November 2, 1931.

GULF COAST

Grade A and Grade B classifications discontinued by leading buyers	See gravity table
Jennings, La. (Nov. 2, 1931)*	$ .45
Lockport, La. (Aug. 27, 1931)†	See Gulf Coast gravity table
Refugio light	See gravity table
Refugio heavy (Nov. 2, 1931)‡	.75
Markham (Nov. 2, 1931)§	.67
High Island (Nov. 2, 1931)†	.65

*Gulf Refining Co. †Vacuum Oil Co. ‡Humble Oil & Refining Co. §The Texas Company. ¶Gulf Pipe Line Co.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark. (all grades) (Nov. 4, 1931)	$ .54
Urbana, Ark.	See note below
Bellevue, La. (June 3, 1931)	.25
Urania, La. (Nov. 2, 1931)	.50
Calion, Ark. (Aug. 22, 1931)	.52
East El Dorado, Ark. (Nov. 4, 1931)	.55
Stephens, Ark., below 29° (Aug. 24, 1931)	.41
Stephens, Ark., 29° and above (Aug. 24, 1931)	.44
Other fields	See gravity table

Note—Smackover, all grades, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co., Bellevue posted by Magnolia Petroleum Co.; Urania by H. L. Hunt, Inc., and Louisiana Oil Refining Co.; Calion by Gulf Refining Co.; East El Dorado by Gulf Refining Co. and Magnolia Petroleum Co.; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Nov. 2, 1931)‡	$ .60
Luling (Nov. 2, 1931)†	.42
Mirando (Nov. 2, 1931)†	.75
Pettus (Nov. 2, 1931)*	.35
Salt Flat (Nov. 2, 1931)*	.60
Thrall§	
Lytton Springs (Lockhart)	See gravity table
Dobrowolski¶	Same as Mid-Continent gravity scale up to and including 35-35.9°.
Somerset§	Same as Mid-Continent gravity scale up to and including 35-35.9°.

‡The Texas Company. *Humble Oil & Refining. †Magnolia Petroleum Co. §Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‖Pioneer Oil & Refining Co.

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective November 3, 1931)

Lima	$1.00
Wooster	1.15
Illinois	.95
Indiana	.60
Princeton	.95
Plymouth	Shut in
Western Kentucky	.90
Midland, Mich. (Oct. 9, 1931)*	.55
Dundee, Mich.†	Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale
Upper and Lower Traverse Sands, Mich.†	Same as Mid-Continent gravity scale
Somerset, Ky. (Nov. 4, 1931)	.80
Hart County, Ky. (Jan. 18, 1932)‡	.40

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‡Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through its own pipe line.

MEXICO

Panuco*	$ .45

*F.o.b. ship, based on January transactions and exclusive of production and export taxes and bar dues.

CANADA

Ontario (Nov. 3, 1931):	
Petrolia*	$1.90
Oil Springs*	1.97
Alberta (Aug. 24, 1931):	
Turner Valley†:	
Crude oil 45-45.9	2.01
Crude oil 50 and above	2.45
Crude naphtha	2.13
Discolored naphtha	2.03

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

Of Interest to Sales Departments

Buying by Japan Aids Demand for Tanker Shipments

NEW YORK, Feb. 13.—Considerable buying of bunker fuel oil in the California market for early shipment to Japan has been reflected in chartering of several tankers to move this oil from the Pacific Coast to Japan during the past week. It is believed that this activity in the coast market is a direct reflection of the military situation in China, and that the oil is required for use by the Japanese navy.

There was relatively little interest evident in the Gulf export market during the week, as indicated by tanker fixtures, and activity continued to center in the Black Sea area.

Tanker charter rates continue low and there is a surplus of tonnage reported for many runs.

Fixtures reported during the week were as follows:

Motorship Athelking (British), 6,019 tons net, dirty, California to Japan, at or about 28½ cents, two ports of discharge, March loading; motorship Orkanger (Norwegian), 6,000 tons, clean, California to Australia, about 25s, Australian currency, prompt loading; steamer Gertrude Kellogg (American), 3,686 tons net, dirty, California to Japan, 28 cents, March loading; motorship Ida Knudsen (Norwegian), 5,275 tons net, dirty, California to Japan, p.t. April loading; motorship Athel (British), dirty, California to Japan, April loading; steamer Taigete (Italian), 5,000 tons minimum, kerosene, Constanza to Italy, basis 8s, February loading; steamer Tritone (Italian), 5,500 tons, fuel oil, Constanza to Naples, Genoa, or Villefranche, two trips, 6s 9d, February loading; steamer Atlantic (Swedish), 120,000 cases refined petroleum, Minatitlan and/or Progresso, to River Plate, basis 10d per case, February loading; steamer Maya (Italian), part cargo 3,000 tons gas and fuel oil, Constanza to Lavera and Lanouville, 8s, February loading.

Motorship Nautilus (Italian), part cargo, 2,500 tons, gas and lubricating oil, Constanza to Spanish Mediterranean, $2 gold, option Spanish Atlantic, $2.50 gold, February loading; motorship Storstad (Norwegian), 5,216 tons net, crude, Tampico to Ostermoor, p.t., March loading; steamer Olterra (Italian), 2,950 tons net, crude, Aruba to Teneriffe, 5s 9d, February loading; motorship Raila (Norwegian), 7,500 tons, clean, Constanza to north of Hatteras, p.t., February loading; motorship Bisca (Norwegian), 8,500 tons, clean, California to Australia, p.t., February loading; motorship Mijdrecht (Dutch), 8,500 tons, clean, Constanza to United Kingdom/continent, 6s 9d, February loading; steamer Clizia (Italian), 3,000 tons, fuel oil and/or case oil, Batoum to Rouen, 9s, February loading; motorship Katy (Norwegian), part cargo 900-1,000 tons, gas oil, Constanza to London, 10s, February-March loading; steamer Lina Campanella (Italian), 5,200 tons deadweight, 4,500 tons, dirty, Constanza to La Pallice, 8s 9d, February loading, then one, two or three months' time charter, 4s.

CHANGES IN PETERSON CO.

CHICAGO, Feb. 13.—Roy Alwood, for 25 years on the staff of Wadhams Oil Corp., has been made sales director of George C. Peterson Co., oil distributors, and James L. Riley, formerly head of Riley Petroleum Co. of Tulsa, treasurer of the Peterson company, it was announced here today.

USE KNOCK TEST MACHINES TO DEMONSTRATE ETHYL GASOLINE

The Continental Oil Co. is now using three demonstrator machines, one of which is shown in the accompanying photograph, in increasing the sale of its Ethyl Gasoline. The machine is permanently mounted in a Ford delivery car. The machines are utilized in showing dealers and car owners just how Ethyl Gasoline operates in their engines in comparison with low antiknock rating.

Each unit comprises a single cylinder Delco light plant which has been converted to show the variation of the engine running under load. The Delco Model 750 farm lighting unit is a single cylinder, four cycle, overhead valve engine directly connected to a 750-watt generator. Instead of using the current it generates for lighting purposes, the current is absorbed in resistance units mounted on the back side of the control panel.

An aluminum plate of the same diameter as the top of the piston, and one-eighth of an inch in thickness, is fastened to the top of the piston by four copper screws. The purpose of this piston is to increase the compression and make the engine more susceptible to detonation or knocking. Because of this increased compression it is necessary to use a special type of spark plug, known as a "cold plug." Increased compression results in increased heat, and therefore, if the ordinary type of plug were used, it would cause preignition of the fuel too readily as soon as the temperature rose.

Instead of the conventional type of carburetor with a float bowl connected to a gasoline tank, the demonstrator machine utilizes two 4-ounce bottles controlled by a three-way valve. One of these bottles contains Ethyl Gasoline and the other an ordinary brand of fuel. The special valve makes it possible to change the engine's fuel supply from one bottle to another rapidly enough for the untrained observer to make an easy comparison of the service rendered by the two gasolines.

Demonstration Test

In explaining this mode of comparison, the demonstrator machine is started on an ordinary blend of gasoline and allowed to warm up thoroughly. As the warming up process progresses, a knocking tendency, which rapidly become more pronounced, is observed. The wattage on the watt meter as well as the revolutions, or speed of the motor, also begin to decrease. The engine is allowed to drop from 150 to 125 revolutions per minute, at which time a very loud metallic knocking can be heard.

The next move is to turn off the engine switch; but the engine continues to run. This illustrates that the engine, because of the excessive temperature generated, is merely preigniting. Then, without turning the engine switch on again, the control valve is changed so that Ethyl Gasoline replaces the ordinary fuel in the firing chamber. In a very few seconds it is noticed that the knock is decreasing, the revolutions per minute are increasing and the temperature of the engine is dropping. In order that the engine will continue to run, the ignition switch must be turned on again. After a minute or two longer of Ethyl Gasoline operation, the detonation or knock has disappeared entirely and the engine is running about 100 revolutions per minute faster than it did with the first fuel.

In order to accentuate the absence of presence of a knock in the demonstration engine still more, a "knockmeter," or assembly of three colored lights, is mounted on the instrument panel. As soon as the knocking tendency become pronounced these lights begin to burn and do not cease burning until the knocking has subsided.

One machine has been assigned to each of the Kansas City, Fort Worth and Lincoln divisions.

MORE RUMANIAN GASOLINE

NEW YORK, Feb. 13.—The Norwegian motorship Raila of 7,500 tons capacity is now loading gasoline at Constanza and will clear that port for a United States Atlantic port, north of Hatteras, before the end of the month. The Raila, which is expected to bring about 55,000 bbls. of gasoline, will probably dock at Baltimore, where a terminal company has handled previous shipments of the Rumanian product.

The current shipment of Rumanian gasoline, it is expected, will be loaded on tank cars at Baltimore and shipped to Detroit for distribution.

LET LARGE CONTRACTS

NEW YORK, Feb. 13.—According to reports from Australia, the Victorian government has contracted for refined petroleum products for the first six months of 1932 with Vacuum Oil Co. (Proprietary) Ltd., The Texas Company (Australia) Ltd., the Shell Co. of Australia, Ltd., Commonwealth Oil Refineries, Ltd., and Atlantic Union Oil Co., Ltd.

Up to the present year, this business has been handled exclusively by Commonwealth Oil Refineries, Ltd., subsidiary of Anglo-Persian Oil Co., Ltd.

COURT IMPOSES HEAVY PENALTY ON TAX EVADER

CHICAGO, Feb. 15.—Conviction of Abe Allen, head of Midway Refining Co. of South Holland, Ill., on charges of defrauding the State of gasoline tax on 16 counts, last week, marks the end of confidence on the part of gasoline bootleggers in their immunity to successful prosecution, according to George F. Barrett, general counsel for the northwest region gasoline tax evasion committee in 14 Mid-West states. Counsel for the defendant have entered a motion for a new trial which will be argued in the criminal court February 19. If the motion for a new trial is denied by Judge John Prystalski, the prosecution will ask that the jail sentences of six months on each count be imposed consecutively. Allen is also liable to aggregate fines amounting to $8,000.

Abe Allen and his brother, Fred, were acquitted late last year on charges of conspiracy to violate the gasoline tax law. In the case now nearing completion Allen is charged with defrauding the State of $50,000 in gasoline taxes. On the witness stand Allen testified that he had offered a check for $250 in payment of the tax to Thomas F. McArdle, chief investigator for the state department of finance, and that the investigator had returned the check with the suggestion that a relative of Mr. McArdle be made a partner in Allen's company. Mr. McArdle denied the accusation.

The trial of Louis Weiss, former investigator of the finance department, and 10 codefendants, on charges of conspiracy to defraud the State of $500,000 in gasoline taxes, is scheduled for February 24 in the court of Judge Prystalski.

ENJOIN GOVERNOR BRYAN

LINCOLN, Neb., Feb. 13.—Judge Frederick Shepherd, District Court of Lancaster County, of this city, today granted temporary restraining order against Governor Charles W. Bryan and his oil inspection department from putting into effect his celebrated order in which he ordered the sale of colored gasoline stopped on and after February 15 except that compounded with tetraethyl lead and was later modified to include all gasoline with an octane rating of 65 or more. The restraining order was asked for by the Trunkenbolz Oil Co. of Lincoln that handles Barnsdall blue gasoline. It is represented by Attorney Lee Bayse, former assistant attorney general of Nebraska. Hearing is set for February 20.

O'NEIL OIL ELECTS

CHICAGO, Feb. 15.—George F. O'Neil was elected chairman and E. B. Reeser, president, of O'Neil Oil Co. of Milwaukee this week at the annual meeting of the stockholders. Mr. O'Neil is founder of the company and also of O'Neil Duro Co., paint manufacturers. Mr. Reeser is president of Barnsdall Oil Co. Other officers elected are, J. F. Adams, vice president and general manager, and George D. Locke and H. M. Edinger, directors. Officers re-elected are, Edward Pfleger, treasurer; Eric E. Schmitz, secretary, and William C. Quarles, counsel.

NEW MARKETING POLICY

Anglo-American Oil Co., Ltd., British subsidiary of Standard Oil Co. (New Jersey) has announced to the British trade that in the future Ethyl Gasoline would be a nonpremium motor fuel.

As far as is known, Anglo-American is the first Ethyl licensee to take its ethylized motor fuel out of the premium class, and the plans of the British company contemplate a marked expansion in Ethyl Gasoline sales.

A. P. I. PRODUCTION DIVISION COMMITTEES ARE APPOINTED

Announcement has been made by Charles F. Roeser, of Fort Worth, Tex., chairman of the general committee of the American Petroleum Institute's Division of Production, of the appointment of officers and members of standing committees of the division for 1932. The personnel of the committees remains substantially as previously appointed. Following are the officers:

General committee on standardization of oil field equipment:

General chairman, J. Edgar Pew, Sun Oil Co., Philadelphia, Pa.; secretary, C. A. Young, American Petroleum Institute, Dallas, Tex., and the following national chairmen of committees on standardization of equipment indicated:

Belting, A. H. Riney, Phillips Petroleum Co., Bartlesville, Okla.; boilers, S. J. Dickey, General Petroleum Corp. of California, Los Angeles, Calif.; cable drilling tools, E. H. Williams, National Supply Co., Toledo, Ohio; rigs and derricks, W. W. Fondren, Humble Oil & Refining Co., Houston, Tex.; oil country tubular goods, John R. Suman, Humble Oil & Refining Co., Houston; rig irons, H. J. Lockhart, Parkersburg Rig & Reel Co., Parkersburg, W. Va.; rotary drilling equipment, E. J. Nicklos, Continental Oil Co., Ponca City, Okla.; wire rope, C. C. Scharpenberg, Standard Oil Co. of California, San Francisco, Calif.; pumping equipment and engines as applied to the production of oil, T. E. Swigart, Shell Oil Co., Los Angeles; steel tanks for oil storage, R. W. Howe, Atlantic Pipe Line Co., Dallas; and special member, C. H. Haupt, Standard Oil Development Co., Elizabeth, N. J.

Central committee on drilling and production practice:

National chairman, W. W. Scott, Humble Oil & Refining Co., Houston; national vice chairman, H. N. Marsh, General Petroleum Corp. of California, Los Angeles; secretary, Mr. Young.

Central committee on unit operation:

Chairman, W. N. Davis, Phillips Petroleum Co., Bartlesville; secretary, Mr. Young.

Central committee on measuring, sampling and testing crude oil:

Chairman, W. S. Farish, Humble Oil & Refining Co., Houston; secretary, Mr. Young; regional committees: California, chairman, R. W. Hanna, Standard Oil Co. of California, San Francisco; southwestern, chairman, Mr. Farish; Mid-Continent, chairman, E. B. Reeser, Barnsdall Oil Co., Tulsa; eastern, chairman, O. D. Donnell, Ohio Oil Co., Findlay, Ohio; Rocky Mountain, chairman to be appointed.

Topical committees of central committee on measuring, sampling and testing crude oil: Group 1, uniform measurements and gauge tables, chairman, Ray F. Shumaker, Prairie Pipe Line Co., Independence, Kans.; secretary, Mr. Young; Group 2, methods of test for crude oil, chairman, R. P. Anderson, American Petroleum Institute, New York; Group 3, pipe lines, chairman, E. L. Adams, General Petroleum Corp. of California, Los Angeles; Group 4, accounting forms and methods, chairman, George H. Forster, Union Oil Co. of California, Los Angeles; Group 5, marine transportation, chairman, W. R. Trelford, Humble Oil & Refining Co., Houston.

Committee on pipe line crossings under railroad tracks:

Chairman, D. S. Bushnell, Northern Group of Pipe Lines, New York; secretary, D. V. Stroop, American Petroleum Institute, New York.

Committee on corrosion of oil field equipment:

Chairman, C. R. Weidner, Prairie Pipe Line Co., Independence; secretary, Mr. Stroop.

Committee on disposal of production wastes:

Chairman, V. L. Martin, Prairie Oil & Gas Co., Independence; secretary, Mr. Stroop.

Committee on fire prevention:

Chairman, George F. Prussing, Union Oil Co. of California, Los Angeles; secretary, Mr. Stroop.

Committee on accident prevention:

Chairman, R. E. Donovan, Standard Oil Co. of California, San Francisco; secretary, H. N. Blakeslee, American Petroleum Institute, Dallas.

Advisory committee on fundamental research on occurrence and recovery of petroleum:

Chairman, H. H. Hill, Standard Oil Development Co., New York; secretary, Mr. Young.

Central committee on district activities:

Chairman, W. H. Meier, Atlantic Oil Producing Co., Dallas; vice chairman, A. H. Bell, Continental Oil Co., Los Angeles; secretary, Mr. Young.

Committee on Fundamental Research

The American Petroleum Institute's advisory committee on fundamental research on occurrence and recovery of petroleum has been appointed for 1932 by Charles F. Roeser, chairman of the general committee of the division of production. H. H. Hill, Standard Oil Development Co., New York, is chairman, and C. A. Young, secretary of the division, is secretary also of the committee.

Following are the members:

L. P. Garrett, the Gulf Companies, Houston, Tex.; E. G. Gaylord, Standard Oil Co. of California, San Francisco, Calif.; K. C. Heald, the Gulf Companies, Pittsburgh, Pa., and F. H. Lahee, Sun Oil Co., Dallas, Tex.; Alexander McCoy, E. W. Marland Co., Ponca City, Okla.; C. V. Millikan, Amerada Petroleum Corp., Tulsa; K. B. Nowels, Forest Oil Corp., Bradford, Pa.; R. D. Reed, The Texas Company of California, Los Angeles, Calif.; H. D. Wilde, Jr., Humble Oil & Refining Co., Houston, and J. J. Zorichak, Midwest Refining Co., Denver, Colo.

New Members on Accounting

Two new members have been appointed to the American Petroleum Institute's committee on uniform methods of oil accounting, it has been announced by Chairman Rodney S. Durkee, Standard Oil Co. of New York, New York. They are: J. W. Watson, Shell Petroleum Corp., St. Louis, Mo., and U. F. O'Brien, Shell Eastern Petroleum Products, Inc., New York.

L. S. Collins, Carter Oil Co., Tulsa, has been appointed a member to succeed A. B. Chesebro.

NAME SUBCOMMITTEE OF OIL ACCOUNTANTS

A national subcommittee of oil accountants, to function under the American Petroleum Institute's central committee on standard procedure for measuring, sampling and testing crude oil, has been appointed for 1932. George H. Forster, Union Oil Co. of California, Los Angeles, Calif., is the national chairman. Members are:

Eastern area—C. J. Barkdull, Standard Oil Co. of Indiana, Chicago; V. L. Elliott, Atlantic Refining Co., Philadelphia, Pa.; C. H. Jay, Pure Oil Co., Chicago, and E. L. Wagon, Sinclair Consolidated Oil Corp., New York, N. Y.

Oklahoma-Kansas area—A. B. Chesbro, Carter Oil Co., and R. M. Higgins, Independent Oil & Gas Co., both of Tulsa.

Rocky Mountain area—George F. Smith, Continental Oil Co., Denver, Colo.

Southwestern area—Gay Carroll, Humble Oil & Refining Co., Houston, Tex.; R. J. Daniel, the Texas Pipe Line Co., Houston; L. S. Sinclair, Magnolia Petroleum Co., Dallas, Tex., and A. M. Smith, Gulf Production Co., Houston.

California area—J. T. Durkee, General Petroleum Corp. of California, Los Angeles, and P. L. Lacombe, Associated Oil Co., San Francisco.

ROBERT KIDD DIES

Robert Kidd, production foreman for the Gulf Production Co. in the McElroy Pool, Crane County, Texas, died February 14.

BELIEVE GASOLINE QUOTATIONS ON BOTTOM

(Continued from Page 12)

refineries and the expansion of plants already operating have taken important business from Mid-Continent operators. Export shipments of Mid-Continent refiners have also been the lowest in years, the decreased foreign demand being absorbed by Coastal refiners and Dutch West Indies plants.

Those who have made a study of this condition believe that this restriction of Mid-Continent refinery outlets will increase in importance and the quicker refiners make whatever adjustments necessary to meet this condition, the better it will be for all concerned. It is pointed out that Mid-Continent refiners cannot hope to regain business lost to competitors with refineries located in the Middle West or who have gasoline pipe line connections from southwestern refineries to some of the larger consuming points in the Middle West.

Just how this competitive situation works out in actual practice has been apparent in the case of some of the companies using the gasoline pipe lines and others who have built new refineries or enlarged old plants located in the Middle West states. These companies in order to obtain outlets for their pipe lines and refineries have made special concessions of one kind or another to buyers. The selling of tank car gasoline on a basis of one-fourth to three-eighths cent per gallon under the low published price for Oklahoma (Group 3) gasoline is a common method used in getting business away from Mid-Continent refiners. Presumably, the refiners with pipe lines and well-located plants can afford to absorb this differential under the Oklahoma market due to their advantage in transportation costs. It is assumed that when these companies obtain the needed outlets for their products that this type of contract will be dropped for otherwise they will not be able to justify the large investments made to secure this advantage in transportation costs.

With this situation in mind, the market students contend that Mid-Continent refiners must more and more restrict their marketing to local outlets leaving the distant markets to those who can serve them with the minimum transportation costs.

Gasoline and Naphtha

The higher octane gasolines grades were easier over the past week. The 57-65 and 65 and above octane grades were much stronger than the low octane material last week. Cases were cited early in the month in which the 57-65 octane grade was bringing three-quarters of a cent per gallon more than under 57 octane U. S. Motor and the 65 octane and above 1 cent per gallon premium.

These premium prices have caused several refiners to shift their operations with the view of increasing the output of the better octane material. Various methods are being used to accomplish this end. Some are using lower endpoint cuts, others are blending a larger percentage of their cracked gasolines and are operating their cracking units with the view of securing the highest octane rating possible with their equipment rather than maximum yields. Still others have been able to materially increase their antiknock rating by using greater quantities of stabilized natural gasolines.

The U. S. Motor under 57 octane gasoline was available from several sources on Monday and Tuesday at a price range of 2⅞ to 3⅛ cents. Resale material and some grades which do not meet full U. S. Motor specifications on distillation and sulphur content were sold as low as 2⅝ cents.

The 60-62 400 endpoint grade low octane was quoted at 3⅛ to 3⅜ cents and was not active at that figure. The 390 endpoint was quoted at 3⅜ cents, 375 endpoint, 3⅝ cents and 350 and 360 endpoints 3¾ cents. Buying was slow regardless of price.

There continues to be a fairly active demand for 440 to 450 endpoints naphthas with gravities ranging from 48 to 52. These naphthas are not being offered by more than a half dozen companies in Oklahoma and not regularly from some of them. The low prices for natural gasolines and the ability to blend a high octane motor fuel accounts for this demand. Sales of the naphthas were made at 2¾ to 3 cents.

Natural Gasoline

Although no large orders were reported, several purchases of natural gasoline were made during the past week for domestic and Gulf Coast delivery. Some of the purchases are going to storage. The 26-70 grade was selling at 1⅜ to 1½ cents. One export company was buying for storage at its coastal terminal. In the coastal shipments a minimum recovery of 90 per cent is usually specified and this same requirement applies in some of the inland shipments.

There is a fair demand for the 18-55 grade. As previously explained this grade is finding new buyers among refiners and jobbers who realize the value of the product in blending operations. In some cases special grades of around 97 recovery and low vapor pressure are being sold as motor fuel at premium prices. The 18-55 grade was generally selling in Oklahoma the first of the week at 1⅞ to 2⅛ cents. The 30-70 grade was selling at 1¼ cents.

Fuels

Furnace oil price ranges continue steady with more material available at the low of the market. The predicted weakness in these products due to the warm weather and the close of the consuming season has not materialized. Sellers predict that before the winter season ends there will be a period of two or three weeks of low temperatures which will bring a substantial increase in spot and contract demand.

The gas oil demand is disappointing to several refiners who had expected that the usual heavy winter would not only absorb their current output but also reduce their summer and fall storage. The competition of natural gas and the greater use of heavier fuels in artificial gas plants together with a decreased consumption of artificial gas due to business conditions is held responsible for the unsatisfactory conditions. U.G.I. gas oil in Oklahoma has dropped to 1 cent a gallon and some high cold test material has sold under that figure.

The high flash, low cold test gas oil which is used for furnace oil blending is stronger than the U.G.I. material at a low of 1¼ cents.

Several refiners who have had spot fuel oil to sell report a more active demand for grades under 30 cold test. The best demand is for grades under 10 cold test. In local deliveries, Oklahoma refiners are able to get up to 30 cents for grades under 20 gravity. On other shipments, prices range down to 22½ cents. High cold test grades up to 24 gravity are selling under 20 cents per barrel.

Kerosene and Tractor Fuel

Kerosene and tractor fuel are more freely offered. However, the low on a 41-43 water white grade continued to be 2⅝ cents and the tractor fuels were quoted at a low of 2 cents.

Lubricants and Wax

About all that can be said about lubricants including finished motor oils is that the next few weeks should see a seasonal increase in demand. Present quotations on some grades are nominal for there is no demand except for the more active grades of bright stock and neutral oils. Prices are unchanged. The wax market is unchanged.

HELIUM EXPERIMENT

In recently completed experiments at the University of Toronto, Prof. J. C. McLennan, head of the physics department, J. O. Wilhelm, A. Pitt and A. C. Benton marked a new step in overcoming the resistance of metals to the passage of electrical currents by placing liquid helium in a glass tube in which a lead ring had been inserted. This so reduced the resistance of the lead to the electricity that a current of 200 amperes circulated with unimpaired strength. "Superconductivity," as this process is called opens up new possibilities in the transmission of power over great distances.

CALIFORNIA OIL FIELD OPERATIONS FOR DECEMBER, 1931

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for December amounted to 15,560,984 bbls., an average of 501,967 bbls. per day. This is an increase of 2,044 bbls. per day over November production.

Total stocks of crude and all products in Pacific Coast territory increased during the month 532,455 bbls. The total stocks at the end of the month were 169,835,949 bbls. The total stock decrease for 1931 was 10,360,444 bbls.

Nine wells were completed during the month with an initial daily production of 3,906 bbls., compared with 18 wells completed during November with an initial production of 73,159 bbls.

TOTAL STOCKS HELD BY CALIFORNIA OIL COMPANIES, BOTH INSIDE AND OUTSIDE THE UNITED STATES

	Dec. 31, 1931	Nov. 30, 1931‡	Dec. stock increases	Dec. 31, 1930‡
Heavy crude and all grades of fuel, gas and Diesel oils	99,301,196	99,628,979	†327,783	106,501,454
Refinable crude	41,895,200	41,666,917	228,283	43,298,161
Finished gasoline, engine distillate and natural gasoline	15,820,753	15,416,404	404,349	17,711,334
Crude gaso. and naphtha distillate	4,105,131	3,474,072	631,059	2,887,581
All other stocks	*8,713,669	9,117,122	†403,453	9,797,863
Total all stocks	169,835,949	169,303,494	532,455	180,196,393

*Includes 630,113 bbls. coke. †Decrease. ‡Revised.

Below are shown revised stock figures for the period December 31, 1930, to November 30, 1931. The reasons which necessitate these revised figures are as follows: First, certain corrections in stocks previously reported, and second, changes in the method of reporting.

Beginning this month, the designation under the first item is changed to read "Heavy crude and all grades of fuel, gas and Diesel oils"; the second item to read "Refinable crude." It is common practice in California to refine for gasoline large quantities of crude heavier than 20° A.P.I., and in the future all such crude will be shown under "Refinable crude." This new classification has necessitated the transfer to "Refinable crude" of considerable quantities of crude formerly included under "Heavy crude and fuel."

Under the fifth item, "All other stocks," all coke held by California companies is now included, with a footnote showing the amount.

	Heavy crude and fuel	Refinable crude	Gasoline	Naphtha distillates	All other stocks	Total
1930—						
Dec. 31	106,501,454	43,298,161	17,711,334	2,887,581	9,797,863	180,196,393
1931—						
Jan. 31	104,914,304	43,069,760	18,240,377	3,275,982	10,031,457	179,531,880
Feb. 28	103,491,323	43,340,921	18,380,477	3,339,904	10,032,925	178,585,550
Mar. 31	102,409,583	43,823,931	17,713,123	3,265,101	9,898,807	177,110,545
Apr. 30	102,768,208	43,918,675	17,556,041	3,152,147	9,674,378	177,069,449
May 31	102,327,766	44,464,035	16,689,288	2,886,471	9,399,971	175,767,531
June 30	101,382,809	43,852,913	16,059,054	2,998,807	9,654,154	173,947,737
July 31	100,701,940	43,528,509	16,172,243	3,027,428	9,544,913	172,975,033
Aug. 31	100,764,088	42,322,341	15,499,404	3,263,557	9,662,258	171,511,648
Sept. 30	100,516,134	41,792,375	15,153,125	2,783,534	9,432,102	169,677,270
Oct. 31	100,179,437	41,445,413	15,408,504	3,221,287	9,174,382	169,429,023
Nov. 30	99,628,979	41,666,917	15,416,404	3,474,072	9,117,122	169,303,494

Below are shown quantities of coke, in barrels, included in "All other stocks" above:

1930—		1931—	
Dec. 31	726,210	June 30	685,777
1931—		July 31	685,570
Jan. 31	720,778	Aug. 31	656,966
Feb. 28	709,744	Sept. 30	663,003
Mar. 31	705,940	Oct. 31	671,446
Apr. 30	706,799	Nov. 30	632,974
May 31	703,341	Dec. 31	630,113

OIL FIELD DEVELOPMENT

Group No. 1—	New rigs up	Active drilling	Completed	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Coalinga	1	0	0	0	621	0	0
Elk Hills	0	0	0	0	205	0	0
Fruitvale	4	4	2	795	20	0	0
Kern River	0	0	0	0	906	0	0
Kettleman Hills	1	11	0	0	24	0	0
Lost Hills-Belridge	0	4	0	0	159	1	1
McKittrick	0	1	0	0	121	0	0
Midway-Sunset	0	1	0	0	1,711	1	0
Mount Poso	0	0	1	125	73	0	0
Round Mountain	1	2	1	330	7	1	0
Wheeler Ridge	0	0	0	0	33	0	0
Group No. 2—							
Capitan	0	0	0	0	0	3	0
Elwood	0	1	1	651	49	0	0
Rincon	0	0	0	0	33	0	0
San Miguelito	0	0	0	0	2	0	0
Santa Barbara	0	1	0	0	5	0	0
Santa Maria	0	1	0	0	166	0	0
Summerland	0	0	0	0	62	0	0
Ventura Avenue	2	5	0	0	138	0	0
Ventura-Newhall	1	3	1	395	410	7	0
Watsonville	0	0	0	0	6	0	0
Group No. 3—							
Coyote	0	4	0	0	159	0	0
Dominguez	1	2	1	1,140	50	0	0
Fullerton	0	1	0	0	356	0	0
Huntington Beach	0	1	0	0	324	0	2
Inglewood	1	1	0	0	210	0	0
Lawndale	0	1	0	0	7	0	0
Long Beach	0	13	2	470	884	2	1
Los Angeles-Salt Lake	0	0	0	0	258	0	0
Montebello	0	1	0	0	167	1	0
Newport	0	1	0	0	1	1	0
Playa Del Rey	1	3	0	0	174	0	0
Potrero	0	3	0	0	10	0	0
Richfield	0	1	0	0	148	0	2
Rosecrans	0	0	0	0	63	0	0
Santa Fe Springs	0	0	0	0	421	1	2
Seal Beach	1	1	0	0	108	0	0
Torrance	0	1	0	0	346	0	1
Whittier	0	0	0	0	171	0	0
Miscellaneous drilling	3	59	0	0	0	18	0
Group No. 4—							
Buttonwillow gas field	0	2	0	0	1	0	0
Dudley Ridge gas field	1	2	0	0	0	0	0
Goleta gas field	0	1	0	0	2	0	0
Total December	18	132	9	3,906	8,612	36	9
Total November	16	141	18	73,159	8,624	21	14
Decrease	*2	9	9	69,253	12	*15	5
Average for year 1931	22	207	21	30,370	8,911	20	15
Average for year 1930	80	434	63	48,710	9,632	21	27
Average for year 1929	109	610	76	100,625	10,550	26	18

*Increase.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

Group No. 1—	Barrels per month	Daily average Dec., 1931	Nov., 1931	Dec., 1930
Coalinga	228,395	7,367	7,491	8,998
Elk Hills	393,819	12,704	12,982	16,400
Fruitvale	99,884	3,222	3,810	2,421
Kern River	301,383	9,719	9,972	11,748
Kettleman Hills	1,851,017	59,710	60,003	22,966
Lost Hills-Belridge	285,905	9,223	9,511	6,501
McKittrick	54,966	1,773	1,831	3,619
Midway-Sunset	1,547,976	49,935	49,465	55,842
Mount Poso	260,076	8,390	8,539	8,538
Round Mountain	46,824	1,511	1,710	178
Wheeler Ridge	16,149	521	523	612
Group No 2—				
Capitan	.....	.....	.....	494
Elwood	608,612	19,633	23,463	34,621
Rincon	49,682	1,603	1,823	2,544
San Miguelito	15,850	511	280	.....
Santa Barbara	5,540	179	175	158
Santa Maria	78,934	2,546	2,497	2,653
Summerland	3,600	116	134	275
Ventura Avenue	1,260,365	40,657	39,203	45,787
Ventura-Newhall	119,205	3,845	3,387	4,480
Watsonville	1,887	61	63	62
Group No. 3—				
Coyote	313,799	10,123	10,410	10,585
Dominguez	399,257	12,879	11,006	9,851
Fullerton (Brea Olinda)	293,692	9,474	9,699	10,640
Huntington Beach	690,783	22,283	20,945	25,749
Inglewood	425,174	13,716	13,622	15,649
Lawndale	9,435	304	287	326
Long Beach	2,365,323	76,301	75,450	93,995
Los Angeles-Salt Lake	34,226	1,104	1,157	1,326
Montebello	200,636	6,472	6,324	7,311
Newport	484	16	.....	40
Playa Del Rey	662,836	21,382	21,587	40,291
Potrero	34,115	1,101	854	1,540
Richfield	204,761	6,606	6,519	7,768
Rosecrans	97,913	3,159	3,393	6,447
Santa Fe Springs	1,970,115	63,552	62,422	85,918
Seal Beach	407,737	13,153	12,948	17,007
Torrance	188,132	6,069	5,938	9,022
Whittier	32,497	1,048	1,300	1,404
Total December	15,560,984	501,967	499,923	573,765
Total November	14,997,700	499,923		
Increase	563,284	2,044		

GIGNOUX LEADS NEW DRILLING COMMITTEE

Announcement has been made of the appointment of J. R. Gignoux, Shell Oil Co., Los Angeles, Calif., as national chairman for 1932 of the topical committee on drilling practice, a group working under the American Petroleum Institute's central committee on drilling and production practice. The major study of the topical committee this year will be rotary drilling fluids. The national chairman of the committee is John F. Dodge, University of Southern California, Los Angeles.

Ralph D. Copley, Standard Oil Co. of California, Los Angeles, has been appointed chairman of the committee's California district. Following are the members:

Bruce Barkis, Rio Grande Oil Co., Los Angeles; C. J. Coberly, Kobe, Inc., Los Angeles; L. A. Cranson, Honolulu Consolidated Oil Co., San Francisco; F. W. Hertel, Associated Oil Co., Ventura, Calif., and W. F. Huff, National Supply Co. of California, Los Angeles.

Wendell M. Jones, Petroleum Equipment Co., Los Angeles; Edmund Jussem, Jr., Union Oil Co. of California, Los Angeles; H. N. Marsh, General Petroleum Corp. of California, Los Angeles; P. C. McConnell, Standard Oil Co. of California, Taft, Calif.; M. N. Phillips, Continental Oil Co., Los Angeles; F. J. Shaver, Ventura; Ben K. Stroud, National Tube Co., Los Angeles; E. P. Tallant, Union Oil Co. of California, Santa Fe Springs, and D. K. Weaver, The Texas Company of California, Long Beach, California.

T. H. OLDS DIES

DENVER, Colo., Feb. 13.—Thomas H. Olds, valuation engineer for the Midwest Oil Co., died at his home in Denver on February 10 of a heart attack at the age of 49 years. He was born at Pontiac, Ill., February 25, 1883, and graduated from the University of Texas in 1902. He then attended Cornell University from which he received his degree as a civil engineer. Mr. Olds went to Mexico for three years, where he worked for the Mexican railroads and a light and power project, and from 1910 to 1914 he was associated with the Pearson Engineering Co. of London. He then was in private practice in Denver for four years, after which he went with the firm of Fisher & Lowrie. He became associated with the Midwest Oil Co. in 1928.

PRODUCTION PROGRAM FOR TULSA MEETING

Members of the American Petroleum Institute's central committee on drilling and production practice have been requested to suggest technical subjects for discussion at sessions of the group to be held in connection with the Institute's mid-year divisional meetings at Tulsa, June 1 to 3 next.

W. W. Scott, Humble Oil & Refining Co., Houston, Tex., chairman of the central committee, has informed members that it is expected the group will have a full day in which to hear papers dealing with current topics and problems, and it is proposed to continue the discussion, begun at the Institute's annual meeting in Chicago last November, of the general subject of the new conception of oil production. It is hoped to gather and disseminate additional information on this subject, and also to consider any other subjects regarded as vital.

Interested oil men have been urged to forward suggestions to the chairman of the group's committee, H. N. Marsh, General Petroleum Corp. of California, Los Angeles, Calif., or to the member of the program committee nearest them. Other members of the program committee are: Mr. Scott; J. R. Gignoux, Shell Oil Co., Los Angeles; Harvey Hardison, the California Co., Midland, Tex.; C. V. Millikan, Amerada Petroleum Corp., Tulsa; W. H. Meier, Atlantic Oil Producing Co., Dallas, Tex.; W. K. Whiteford, Barnsdall Oil Co., Tulsa, and C. A. Young, American Petroleum Institute, Dallas.

JOHN E. NEELLY DIES

SAN ANTONIO, Tex., Feb. 15.—John E. Neelly, for the past two years a resident of Natalia, a small place near San Antonio, and prior to that of Tulsa where he operated as an oil man, died at his home here of a heart attack Wednesday night and was buried Sunday in Fayetteville, Ark. One of his sisters was the wife of Joe T. King, of the Kingwood Oil Co., of Okmulgee, Okla.

HUNGARIAN GASOLINE

The Budapest Municipal Gas Co. and the Salgotarjan Coal Mining Co. of Hungary are planning to make synthetic gasoline. The Budapest Technical University is developing a detailed manufacturing process for obtaining benzol from coal tar similar to the German method. The Budapest Motor Bus Co. plans to buy its gasoline from the gas company.

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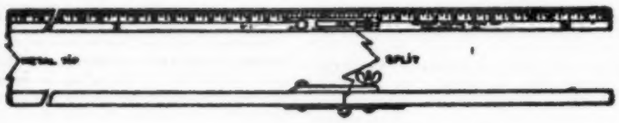

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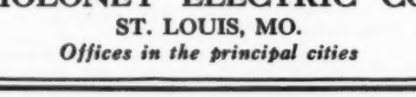

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CHART PAPERS MAY CAUSE INACCURACIES

(Continued from Page 16)

50 per cent, and the office is heated to 70 degrees the relative humidity will drop to 27 per cent.

In the third place, in applying the above formula we will use a value of E of 1 per cent so that any of the results can be multiplied by the percentage expansion of any of the papers given in the table of results and get the percentage of error directly. Probably the actual errors will not be as large as this for two reasons: One is that the extreme conditions may not be encountered; also, if they are, they will come about gradually so that the worst conditions will not apply for the entire period of the time that the chart is on the meter.

Investigating the Formula

With these qualifications in mind we can proceed to investigate the above formula. In the first place we see that the error increases as A increases, other factors remaining constant. In other words, the radius of the zero line should be as small as possible. We also see that the error decreases as B increases. This, however, is a dimension which cannot conveniently be changed because of the unwieldy size of the case and chart. We might combine the two above statements and say that the ratio of A to B should be as small as possible. The last, and most important, deduction is that the error decreases as r increases until r is equal to R, or until the meter is reading the maximum when the error becomes a minimum and is

$$\frac{A+B}{B} \times \frac{E}{2}$$

Now let us examine these results quantitatively and see just how much the errors are affected by applying the formula to some actual conditions.

Table 3 gives the dimensions of the principle orifice meter charts on the market.

TABLE 3

	A	B
(1)	1.375	3.625
(2)	1.000	4.000
(3)	.875	4.250

We will give three concrete examples to show the application of the formula, all of them based on 100-pound, 100-inch charts, and using the dimensions of the meter chart, No. 1 in the above table.

Case 1. High static, low differential. Assume an average static of 80 pounds pressure and a differential pressure of 10 inches. We then have for the error in the static reading:

A = 1.375
B = 3.625
R = 100
r = 80
E = 1.00

$$\frac{100\times1.375+80\times3.625}{80\times3.625}\times\frac{1}{2}=.737\%$$

This is the error of the reading of the static pressure above atmospheric pressure, but since it is the absolute reading that affects the accuracy of the meter this will have to be multiplied by the factor $\frac{80}{80+14.4}$ which is the atmospheric pressure divided by the absolute pressure. This reduces the error to .625 per cent.

Error in Differential Pressure

For the error in the differential pressure we have:

A = 1.375
B = 3.625
R = 100
r = 10
E = 1.00

$$\frac{100\times1.375+10\times3.625}{10\times3.625}\times\frac{1.00}{2}=2.396\%$$

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explained above is one-half the sum of these two quantities, thus

$$(.625+2.396)\tfrac{1}{2}=1.51\%$$

Case 2. High static, high differential. Assume 80-pound static and 80 inches differential.

In this case the static error remains the same, namely .625 per cent. The differential error is:

$$\frac{100\times1.375+80\times3.625}{80\times3.625}\times\frac{1.00}{2}=.737\%$$

Therefore, the error of meter reading is

$$(.625+.737)\tfrac{1}{2}=.681\%$$

Case 3. Low static, low differential. Assume 10-pound static and 10 inches differential.

In this case differential error is the same as in Case No. 1, namely 2.396 per cent.

Error of static reading is the same as the differential error, but in order to determine the effect on the meter reading it will have to be multiplied by the factor $\frac{10}{10+14.4}$ as explained in Case No. 1.

This is $2.396\frac{10}{10+14.4}=.982$.

Therefore the error of meter reading is $(2.396+.982)\tfrac{1}{2}=1.689$.

Applying the Formula

Table 4 gives the results of applying the above formula to the three principal orifice meter charts on the market.

TABLE 4

Type meter	A	B	Case 1	Case 2	Case 3
(1)	1.375	3.625	1.51%	.68%	1.69%
(2)	1.000	4.000	1.15%	.61%	1.23%
(3)	.875	4.250	1.03%	.58%	1.08%

It should be borne in mind that the results given in Table 4 are based on a total expansion of the paper of 1 per cent so that in order to get the actual errors of the meters it is necessary to multiply these results by the value E or the actual total percentage expansion of the paper being used. Thus if we use paper A and take the average of the expansion in the machine direction and cross machine direction and apply it to case No. 1 of meter No. 1 we get a possible error of $1.26\%\times1.51=1.90\%$. Whereas if we use paper D, the Alemco chart, we get a possible error of $0.11\%\times1.51=0.17\%$.

From this it can be seen how important it is from the point of view of accuracy to use the highest grade paper possible. The above analysis has been made very conservatively and anyone who has gone through it carefully can readily see that very much larger errors may occur.

STUDY OF EAST TEXAS WELL CORES TELL STORY

(Continued from Page 15)

the oil sand was recovered by coring. Some cores were missed and a considerable interval drilled like sand. It is to be supposed, however, that these intervals contained some oil sand, broken with beds of shale and ash.

Gladewater Area

To the west of the No. 1 White, half way to the town of Gladewater, Vacuum Oil Co.'s No. 1 Beavers, George P. Raines Survey (No. 14 on map) has the following sand record, a combination of drilling and coring:

3,501	Base of Austin chalk.
3,501-3,507	Dark shale; cored.
3,507-3,511	Hard, streaked sandy shale.
3,511-3,513	Hard, light, ashy sand.
3,513-3,514	Hard, ashy, sandy shale.
3,514-3,515	Ashy sand, some conglomerate.
3,515-3,521	Sand, lightly saturated.
3,521-3,522	Ash.
3,522-3,530	Red beds.
3,530-3,547	Probably mostly fine grained sand. Some shale and ash. Initial production 102 bbls. in 50 min., open tubing.

This well is located on one of the choice tracts in the field. In spite of the fact that this is a high location in the thick sand area, it will be observed that

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the section above the red beds contains little or no favorable sand.

Closer to the town of Gladewater, the Stanolind Oil & Gas Co., on its No. 1 Boles, H. Edwards Survey, furnishes a detailed sand record which serves to substantiate the poor sand conditions indicated in the Vacuum Oil Co.'s Beavers well (No. 15 on map):

3,528.0	Base of Austin chalk.
3,528.0-3,532.6	Dark shale and sandy shale.
3,532.6-3,543.5	Silty shale, some shale, some ash; no oil.
3,543.5-3,547.5	Ashy sand and ash.
3,547.5-3,552.5	Ashy saturated sand; some good oil sand; poor recovery.
3,552.5-3,554.0	Ashy oil sand.
3,554.0-3,555.0	Ash.
3,555.0-3,560.0	White, slightly sandy shale.
3,560.0-3,565.0	Red beds.
3,565.0-3,566.0	Ashy saturated sand.
3,566.0-3,566.5	Hard, white ashy sand; no oil.
3,566.5-3,568.0	Ashy, white sand and ash.
3,568.0-3,572.0	Sandy ash.
3,572.0-3,576.6	Coarse oil sand; ashy.
3,576.6-3,577.6	Ash.
3,577.6-3,583.0	Cored; recovered 1 foot good oil sand; some ash. Initial production 126 bbls. an hour, three-quarter inch choke.

This record is fairly complete and it is certain that no considerable body of favorable sand exists above the red beds. The production in this well unquestionably is largely derived from the zone at the base in which cores were missed.

West Edge, Gladewater Area

A west edge well in this area, together with the three wells just listed, will completed a cross-section of the field along the north side of the Sabine. This fourth well is the Stanolind Oil & Gas Co.'s No. 1 Phillips, located in the William Goodman Survey of Upshur County, due north of the town of Gladewater. (No. 16 on map.)

3,628.0	Base of Austin chalk.
3,628.0-3,629.6	Gravel cap.
3,629.6-3,631.6	Black shale, slightly sandy.
3,631.6-3,646.6	Dark, laminated shale.
3,646.6-3,652.6	Hard, lignitic, light gray, sandy shale.
3,652.6-3,658.0	Greenish shale and sandy shale.
3,658.0-3,666.0	Gray, sandy shale.
3,666.0-3,687.0	Ashy sand, poorly saturated; poor recovery. Initial production 125 bbls. an hour, three-quarter inch choke.

This well shows the same "trash" section in the upper part of the pay that has characterized the west side wells discussed earlier in this article. The pay from which the oil is derived in this test evidently lies in the zone of poor recovery at the base.

East Side, Lathrop Area

To complete the record, three additional wells will be discussed, all located in the heart of the Lathrop district. The first of these the Amerada Petroleum Corp.'s No. 1 Bumpus, is situated in the Castleberry Survey. (No. 17 on map.)

3,528.0	Base of Austin chalk.
3,528.0-3,535.0	Cored; recovered 3 feet of black shale and chalk.
3,535.0-3,541.0	Cored; recovered 2 feet oil sand.
3,541.0-3,543.0	Cored; recovered 1 foot cap rock.
3,543.0-3,548.0	Drilled like sand.
3,548.0-3,560.0	Recovered fragments sand and gravel.
3,560.0-3,562.5	Recovered 6 inches saturated sand.
3,562.5-3,568.5	Recovered 2 feet ashy sand.
3,568.5-3,580.0	Cut like ashy sand to 70, hard to 75, soft sand to 80.
3,580.0-3,583.0	Gravel. Initial production 262 bbls. an hour, open tubing.

So little material was actually recovered in coring this well that it presents an unsatisfactory record. The record is interesting, however, because it illustrates the type of information from which most sand estimates have been made.

The sand record of the Sun Oil Co.'s No. 1 Tate, William Castleberry Survey (No. 18 on map) follows:

3,506	Base of Austin chalk.
3,506.0-3,508	Cap.
3,508.0-3,519	Drilled like sand.
3,519.0-3,523	Oil sand, streaked with ash.
3,523.0-3,528	Recovered 6 inches oil sand.
3,528.0-3,538	Recovered 3 inches ash; total depth. Initial production 102 bbls. an hour, eleven-sixteenths inch choke.

In the same area, the Sun Oil Co.'s No. 1 McKinley, D. Sanches Survey, has the following sand record. This is another example of a record in which little recovery was made. (No. 19 on map.)

3,590	Base of Austin chalk.
3,590.0-3,592	Cap.
3,592.0-3,619	Cored; no recovery; cut like sand.
3,619.0-3,620	Good oil sand.
3,620.0-3,625	Cored; no recovery; cut like sand; total depth. Initial production 100 bbls. an hour, open tubing.

This well completes the record of 19 more or less representative sand logs, chosen from all parts of the field. This list might be augmented indefinitely, but our knowledge of sand conditions would be little improved thereby. A study of additional records presents the same difficulties that are encountered in the present list. There are too few wells in which a definite opinion of sand conditions may be formed by examination of visual evidence.

Conclusions

Several important conclusions may be drawn from the sand data presented. To the discerning reader it must be evident that as the reliability of the sand record decreases, i.e., as the quantity of the recovered material decreases and the classification is left more to the imagination, the proportion of good sand increases. It cannot be considered an accidental circumstance, however, that wherever a complete record of sand conditions is available, thick bodies of high-grade pay sand are rare and the quantity of good sand decreases sharply in proportion to the poor sands and trash sediments. It has been admitted, initially, that there is no stable uniformity in the lithology of the pay section and that lateral gradations occur with infinite variety and with great rapidity. There is no justification for the belief, however, that the best sand records have been secured only at those points where sand conditions are poorest. It is a more logical conclusion that the reliable records represent actual sand conditions and that those less complete and more favorable records are largely the product of misinterpretation.

The sand records submitted have been selected from the heart of the field and from both east and west edges. They indicate a sand section that contains, as a rule, one fair-sized body of favorable oil sand, numerous thin bodies of oil sand and a large proportion of mixed sediments, sandy and otherwise. The visual evidence indicates that the main body of oil sand rarely exceeds 15 feet in thickness and that seldom does one well encounter more than one thick body of oil sand. In fact, to the knowledge of the writer, no well has ever cored a continuous body of oil sand of this thickness and brought it to the surface. With the possible 15-foot body of oil sand encountered in the thick sand area, there is additional oil sand in strata of from 2 to 5 feet in thickness that might make up a body of favorable sand totaling 25 feet. It is to be understood that this is partially conjecture but it is a possibility that must be considered. It is known positively that some of our best core records disprove, locally, the presence of this quantity of reservoir material but there are others in which the doubt exists.

Reservoir Cross-Section

It is the intention of this article to discuss the geology of the East Texas Field, only as it applies to the form and lithology of the sandy section that constitutes the oil reservoir. An estimate of the per-acre oil yield may be arrived at from study of the section. Estimates of total field recovery necessitate consideration of the form of the reservoir in its cross-section. Avoiding irrelevant details, it is sufficient to state that at a point somewhat east of the eastern margin of the field, the Austin chalk and the lower Cretaceous limestones are in virtual contact. Progressing westward, this contact is gradually separated by a wedge of sandy sediments, the Eagleford-Woodbine section, which continues to thicken westward across the productive area. In its eastern expression, this sandy zone may be classed as a "trash" section, with sands of coarser texture and greater purity increasing in prominence as the zone thickens. From the central, thick sand area, westward, the changes in the character of the sand section vary along the strike of the field. To the north of the Sabine River, in the Gladewater district proper, the main sand is overlapped by a body of red shales which is in turn overlain by a trash sand section. The increase in thickness of the Eagleford-Woodbine section, due to the introduction of these younger beds, finds expression in a flattening of the dip on the base of the Austin chalk. The character and detailed distribution of these upper zones is imperfectly understood. It is known that the sand zone above the reds, locally termed the "upper sand," is, in the main, silty and devoid of important saturation, while the lower, more favorable sands, where overlain by the red beds, lie in a position closely adjacent to the water level.

To the south of the Sabine River, the red bed section is again an important feature, as indicated by the Houston Oil Co.'s No. 1 Cole, J. A. Duncan Survey (No. 20 on map), which encountered no sands above the red beds; the Gulf Production Co.-E. L. Smith Oil Co.'s No. 2 Morris, already discussed, which found the upper sand missing, and the Gulf Production Co.'s No. 2-A Shaw, also described before, which encountered no upper sands. The details of red bed influence, however, are even less well known in this sector of the field, and it is probable that there are points where the sand section dips beneath the water level before the red series has come into play.

Regardless of whether the overlap of reds and "upper sand" has occurred within the area of production, the water table operates to limit the western margin of oil distribution. It is possible to picture the present position of the water level, traversing the sand section from the top at the western edge, to the base at the center of the field. The cross-section thus envisioned has a form similar, in its essential features, to the Gladewater area south to Joiner.

Sand Content

With the data at hand, it should now be possible to form a reasonably accurate estimate of the sand content of the East Texas reservoir. The records submitted here may be classified as follows: (1) Of the 14 wells cited from the thick sand area, six penetrated a maximum of 38 feet of pay section. These six, in recovered saturated sand and zones of no recovery, show an average thickness of pay sand equivalent to 60 per cent of the whole. This represents an actual sand thickness of from 15 to 20 feet. (2) In the remaining eight wells, a maximum of 81 feet of pay section was cut, with a proportion of pay sand recovered and blanks registered equal to 35 per cent of the whole. Bear in mind that both of these estimates are made on the assumption that the greater part of the blank zones may have been occupied by saturated sand.

A cross-section of the oil reservoir has a general form that may be represented by two inverted triangles, the vertical sides, with a length of 25 feet, coinciding in the center of the field and the small angles extending outward to be formed, on the east, by the taper of the sand body and on the west by the plunge of the sand below the water table (see sketch). The unequal bases have a combined length equal to the width of the productive area. Since the triangles may be irregular in shape and have a greater than normal area, i.e., the sides forming the marginal angles may meet at some point outside the limits of production, or the long (basal) sides of the triangles may be convex, rather than straight, an alternative figure of 35 feet is used for the length of the vertical side. With an average field width of 5 miles and a length of 32 miles, computation gives a productive area of approximately 100,000 acres, although these figures must be considered approximations, with a wide factor of error. For the purposes of our problem, this area may be said to be underlain by a body of solid oil sand, equal in thickness to the half of the alternative figures chosen for the vertical thickness in the center of the field. With an area of 100,000 acres, underlain by a minimum thickness of 12.5 feet and a maximum thickness of 17.5 feet, the cubic content of sand totals between 1,250,000 and 1,750,000 acre feet.

Estimated Recovery

The questions of oil yield and porosity have been the subject of much study and it has been arbitrarily agreed that a yield of 750 bbls. should constitute a reasonable anticipation per acre foot. This figure will be used in these estimates. With a sand content of from 1,250,000 to 1,750,000 acre feet and a recoverable acre foot oil yield of 750 bbls., the final field totals should fall between a minimum 937,500,000 bbls. and a maximum 1,312,500,000 bbls. These totals are the approximate equivalent of a 9,375-bbl. minimum and a 13,125-bbl. maximum per-acre recovery.

Another means of estimation, based on porosity and recovery factors used by one of the major East Texas producers, gives a less optimistic picture. This company places the average porosity at 20 to 22 per cent and the recovery at 40 per cent. The resultant factor for recoverable oil per acre foot is 630.8 bbls. By this means of computation, the final field totals fall between a minimum 789,000,000 bbls. and a maximum 1,104,000,000 bbls., with respective per-acre yields of 7,890 bbls. and 11,040 bbls.

The figures given for the anticipated recovery of oil per acre-foot are arbitrary ones and are based upon a groundwork of more or less ideal conditions. To say that a recovery of 750 bbls. or 630.8 bbls. per-acre foot is to be anticipated is to say that this quantity of oil is to be recovered, conditions being favorable. The two factors having the greatest bearing on recovery are the lifting power of the gas contained within the oil and the flushing power of the water drive. In the East Texas Field it is known that there is no free gas within the sand, that the quantity of gas dissolved in the oil is less than normal and that the water drive is sluggish and, up to the present time, essentially noneffective. There is reason, therefore, for grave doubts that the sand will actually give up the quantities of recoverable oil that is here credited to it. Since this problem is of such paramount importance, it deserves a great deal of future consideration and study.

In concluding this article, the writer wishes to emphasize the fact, already made obvious, that the conclusions herein drawn are of necessity based on the available direct evidence. The well records from which sand data have been drawn do not represent 1 per cent of the wells drilled in the field, but they are scattered in such a way that they should be representative. Of the many records not available for inspection, it is possible that there are individual wells that show a much greater sand thickness than has been credited to the field. It is the purpose of this discussion, however, to deal with averages and not with exceptions. In the last analysis, it must be left to the judgment of the reader to consider the evidence and to decide upon the fairness of the conclusions.

CICERO TO CAPITAL TO DRAFT COMPACT

Steps toward an oil states compact are to be taken February 19 when the legal subcommittee of the Oil States Advisory Committee meets in Washington.

Cicero I. Murray of Oklahoma City, chairman of the committee, left Saturday night for Washington. There are two other members of the legal subcommittee, and each has a tentative draft of a bill to be presented to Congress to define and legalize an oil compact between states. It probably will be completed and presented in the form of a resolution within the next two weeks.

Under the proposed measure, the oil producing states would have authority to make rules and regulations restricting production to market demands within their respective territories, with approval of the state legislatures. Legislatures in the oil states meet in January, at which time it is expected the interstate compact will be presented to them.

IMPERIAL OPERATING LARGE NEW LABORATORY

(Continued from Page 22)

the work involving inspections of a physical nature into four departments—white products, lubricating and fuel oil, asphalt and miscellaneous.

The principal duty of these four laboratories is to prevent shipment of products which do not meet the specifications.

The white products laboratory is concerned mainly with inspections on water white products, which include unfinished and finished gasolines, solvent naphthas, and illuminating oils. The principal inspections applied to these products are gravity, flash, viscosity, color, doctor test, vapor pressure and distillation. Each test has a significance but one must remember that the criterion of quality is based on the judicious selection of properties which can only be disclosed in a well-equipped laboratory. From time to time tests go into the discard as they lose their significance. The doctor test mentioned above is applied to products that have been treated with "doctor solution" for the purpose of rendering a hitherto malodorous gasoline, for example, sweet smelling.

Samples pour into this department from a great many plant sources and the deluge is augmented by samples from the other Imperial Oil refineries.

Besides seeing that the shipments meet specifications, the principal duties of these laboratories are to guide the still-runners, inspect the still streams and rundown tanks to avoid contamination of the storage tanks. Every precaution is taken to ensure uniform and high grade products.

Naphtha Treating

The following description of the inspections made in the course of the production of solvent naphtha tells the story of routine control.

The gravity is determined on hourly samples from the crude line from oil fields, and additional inspections such as viscosity, sulphur, stock distillation and four-point control, are made on composite samples. The latter determination indicates the yield of solvent naphtha that should be obtained. The continuous still or flash coil operator makes gravity determinations to control the light naphtha fraction distilling from the crude. This crude naphtha flows to the rundown tank on which gravity, distillation, color and corrosion inspections are made daily.

The operator of the continuous naphtha treating plant charges his equipment from the rundown tank and doctor treats the naphtha, testing it periodically to be sure that no oil flows to the treated naphtha tank that is not sweet in odor. The laboratory makes its inspections on the latter tank whenever it is pumped.

The steam still operator then charges the stills from this tank and the laboratory inspects the stream coming overhead from these stills each shift, or more often if requested by the operator. The finished product is run to a storage tank on which complete inspections are made. Whenever barrel-house filling tanks are pumped into or tank cars loaded, complete inspections are again made to ensure that the product meets specifications before shipping. The same close scrutiny is maintained over all products. A conservative estimate is that at least 150,000 inspections are made annually in this department.

Lub and Fuel Oil

The lubricating and fuel oil laboratory controls the operations concerning lubricating distillates and finished oils, cracking coil stock and fuel oils. The same careful control is exercised here.

Many of the inspections made in this laboratory are similar to those made on white products but of course have a different significance in the case of heavy oils. Although these tests are rigidly carried on in accordance with the long-established standard methods of the American Society for Testing Materials, their significance has become greatly increased during the last few years, thanks mainly to the co-operation obtained from actual service tests carried out by research organizations, motor manufacturers, oil companies and different governments. Approximately the same number of inspections are made annually in this laboratory as in the white products laboratory.

The asphalt laboratory is housed in the main building and handles all reports from the plant laboratory.

In addition to controlling the final product, the asphalt laboratory controls the production of the raw material, most of which is produced in Plant No. 1. This base, as well as some emanating from Plant 2, is processed in the asphalt equipment at the latter plant for road building or roofing asphalt.

The principal routine inspections carried out by this department are: gravity, flash, viscosity, penetration, ductility, melting point, distillation and solubility in various solvents. These laboratories make about 75,000 inspections annually.

The inspections carried on in the miscellaneous inspections laboratory include sulphur determinations, gums, copper corrosions on solvent naphthas, gasolines, illuminating oils, lamp and stove burning tests on the latter, carbon residues of lubricating oils, melting points and percentage of oil in paraffin waxes and penetrations of greases.

Solvent naphthas include those products used in varnish, enamel, and lacquer manufacturing, cleaning and dyeing establishments and rubber industries. Illuminating oils include coal oil, lighthouse and railway signal oils, as these oils lend themselves to being burnt in a lamp, the lamp method of determining total sulphur is used. The sulphur determinations on lubricating and fuel oils are made by exploding the oil in a bomb in the presence of oxygen. These are carried out in the chemical laboratory.

Gum Determination

The gum determinations made in this room are two in number. The first is indicative of the "pre-formed" gum and is determined by weighing the residue resulting from the evaporation under standard conditions of the naphtha under inspection contained in a standard dish. The second method is an accelerated test and indicates qualitatively what is known as "potential gum." This result is automatically recorded, the determination being made on gasolines to ascertain their relative stabilities. The gasoline is placed in a bomb into which oxygen is passed until a definite pressure is reached. The bomb is then maintained at a constant temperature. The formation of gum and breaking down of the gasoline is determined by a fall in pressure of the oxygen due to dissolution in the gasoline.

The copper corrosion is a qualitative indication of the presence of corrosive sulphur. Copper is chosen as it is the metal or constituent of the alloys most generally used in intake lines, etc., as well as the one showing the greatest affinity amongst the ordinary materials of construction for corrosive sulphur.

The lamp and burning tests on illuminating oils are carried out with the purpose of determining their serviceability in actual practice. Observations are made of consumption, the condition of the globes and the wick. The Conradson carbon residue test is considered to give the most dependable results indicative of the nature and amount of carbon that will be deposited by a given lubricating oil on the piston head and combustion chamber walls of the engine.

The inspections made on paraffin waxes are selfexplanatory, the melting point being an indication of the change from the solid to the liquid state. The lower the percentage of oil, the higher will be the melting point, other things being equal.

Penetration tests are made on each batch of grease lending itself to the test. These inspections serve as indications of consistency and as controls in the maintenance of uniform products.

Numerous inspections are made in this laboratory on products other than routine, the latter work alone calling for at least 20,000 inspections annually.

EAST TEXAS FIELDS

(Continued from Page 26)

ably prudent manner. By this method the small acreage owner would secure a maximum income for a minimum development cost.

Under this plan the division would be based upon the ratio of the volume of producing sand under each lease in proportion to the volume of producing sand under the entire field. This would be accomplished by determining the volume of the producing sand under each lease as soon as the producing limits of the field are ascertained. Petroleum engineers will estimate the cubical contents of producing oil sand above the water table as to each producing lease in the field. All such estimates shall be averaged together for final volume, and a new estimate made every 60 days.

Whether or not this plan is adopted remains to be seen, but it involves considerable calculation, and there is a big question as to its possibilities under the existing circumstances of many small leases in the area, and the remainder of the field producing under the per well basis of proration.

The Cranfill & Reynolds' No. 1 Rash, which was responsible for this plan being proposed, has been completed for a 160-bbl. well at a total depth of 3,728 feet, thereby extending the field for another 3½ miles to the north, or opening another, and separate pool as some consider. In case the area proves to be a separate pool the Arkansas Fuel Oil Co.'s plan would be more likely to be adopted, for different conditions will then exist as to producing the area.

There are three other tests reported for the Rash area. One is to be located in the Von Roeder Survey, approximately 2½ miles from the Rash producer, one is to be drilled on the D. F. Smith farm in the John Denson Survey, and Eslick and others are rigging up on their test approximately 1½ miles to the southeast of the producer, in the McKinney and Williams Survey. Another test is to be drilled on the M. P. Deltores Survey. All of these tests will give more information on the area, and prove its possibilities.

88 Completions

Completions in the district dropped to 88 this week, while first reports increased to 109, some of the operators and companies no doubt figuring on increasing their daily production by drilling more wells. It was formerly believed that locations would drop as the per well allowable was cut, but this was found to be an erroneous belief, and instead, first reports have generally been found to increase after the allowable was cut back to hold down production.

Production for the 24-hour period ending at 7 a.m. February 13, was 298,738 bbls. from 3,968 wells. There were 146 wells which produced but did not report their production, consequently production for the day would run over 300,000 bbls. There were 4,142 wells completed on that date. Pipe line runs were 314,852 bbls. for the day.

EAST CENTRAL TEXAS

C. C. Curtis' No. 1 J. L. Davis, in the Pedor Zarza Survey, northern Falls County, in the East Central Texas district, flowed 35 bbls. in 25 minutes when first opened up this week, pressure dropping rapidly, and making it appear as only a small flowing well, or a pumper of around 150 to 200 bbls. as was first estimated before it was opened for a test. Production is going into two 1,000-bbl. tanks which were erected last week. Gravity of the oil is 35 degrees.

Grover, Bennett, Moore and McNamara are to drill a test on the E. W. Pinchard 140-acre tract in Lot 4, J. D. Sanchez Survey, several miles north of the Curtis discovery, and over in McLennan County. Grover has drilled several shallow wells in this area.

Bateman and others are planning a second test on the Czajkowski farm in the Robert Moffitt Survey, Falls County. A dry hole was formerly drilled near this second location.

Due to the fact that the Curtis producer is considered as producing from a crevice, and is a small well, and his company holding over 4,000 acres around the discovery, but little interest has been displayed in the area, none of the major companies spending any money for leases in the area, and but few independent operators giving it consideration. However, it brings the county into the limelight again, and may lead to more activity and considerable exploitation during the next few months.

COMPLETIONS IN EAST TEXAS

Gregg County

Arkansas Fuel Oil Co.'s No. 3 Snoddy, top sand 3,577 feet, initial production 85 bbls. in one-half hour through open tubing, total depth 3,600 feet; No. 3 Stephens, top sand 3,595 feet, initial production 80 bbls. in one-half hour through open tubing, total depth 3,620 feet; No. 2 Walker, top sand 3,641 feet, initial production 75 bbls. in one-half hour through open tubing, total depth 3,664 feet. Atlantic Production Co.'s No. 4 McBee Fisher, top sand 3,497 feet, initial production 75 bbls. per hour through 1-inch tubing choke, total depth 3,535 feet. Atlantic and others' No. 3 T. W. Lee, top sand 3,591 feet, initial production 64 bbls. per hour through three-quarters-inch tubing choke, total depth 3,643 feet.

Bob Bashara and others' No. 1 B. Johnson, top sand 3,640 feet, initial production 37 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,647 feet. Barnsdall and Sun Oil companies' No. 5 Bingham, top sand 3,499 feet, initial production 147 bbls. per hour through 1-inch tubing choke, total depth 3,557 feet. H. T. Bashara's No. 1 T. B. Harris, location abandoned. Byrd-Frost, Inc.'s No. 1 J. J. Repond, top sand 3,707 feet, initial production 131 bbls. through three-quarters-inch tubing choke, total depth 3,775 feet.

Columbia Oil & Gas Co.'s No. 2-A J. B. Doby, top sand 3,540 feet, initial production 100 bbls. in one-quarter hour through open tubing, total depth 3,590 feet; No. 2 J. McGrede, top sand 3,609 feet, initial production 110 bbls. per hour through 1-inch tubing choke, total depth 3,629 feet. Deep Rock Oil Co.'s No. 2 A. Tooke, top sand 3,525 feet, initial production 100 bbls. per hour through three-quarters-inch tubing choke, total depth 3,570 feet. Dilard Oil Co.'s No. 5 W. E. Jones, top sand 3,634 feet, initial production 50 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,659 feet. James Burrow's No. 1 J. M. Whittle, top sand 3,640 feet, initial production 90 bbls. per hour through 1-inch tubing choke, total depth 3,665 feet.

Empire Gas & Fuel Co.'s No. 3 Bumpass, top sand 3,649 feet, initial production 43 bbls. in one-quarter hour through open tubing, total depth 3,511 feet. F. H. E. Oil Co.'s No. 4 J. Flemster, top sand 3,630 feet, initial production 30 bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,660 feet. Glasscock Brothers' No. 1 S. G. Mattox, top sand 3,587 feet, initial production 30 bbls. in one-half hour through 1-inch tubing choke, total depth 3,668 feet. Gulf Production Co.'s No. 3 Anderson, top sand 3,477 feet, initial production 120 bbls. per hour through three-quarters-inch tubing choke, total depth 3,493 feet.

Humble Oil & Refining Co.'s No. 7 T. B. Harris, top sand 3,505 feet, initial production 65 bbls. per hour through three-quarters-inch tubing choke, total depth 3,550 feet; No. 6 A. L. Hughes, top sand 3,615 feet, initial production 80 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,657 feet. Leckner and Hubbard's No. 1 F. Jones, top sand 3,560 feet, initial production 55 bbls. per hour through open casing and tubing, total depth 3,590 feet. Van Hatcher and others' No. 1 John Boyd, top sand 3,645 feet, initial production 90 bbls. per hour through three-quarters-inch tubing choke, total depth 3,660 feet.

Shell Petroleum Corp.'s No. 4 G. Jones, top sand 3,525 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,585 feet. J. R. Smith and others' No. 2 Doby, top sand 3,476 feet, initial pro-

duction 12 bbls. in 10 minutes through open tubing, total depth 3,500 feet. Stanolind and Simms Oil companies' No. 6 Fonville, top sand 3,515 feet, initial production 176 bbls. per hour through open tubing, total depth 3,556 feet. Superior Oil Co.'s No. 9 Ingram, top sand 3,543 feet, initial production 184 bbls. per hour through open tubing, total depth 3,620 feet. Tidal Oil Co.'s No. 2 Arch Davis, top sand 3,555 feet, initial production 70 bbls. in one-quarter hour through open tubing, total depth 3,585 feet; No. 4 Jones, top sand 3,644 feet, initial production 73 bbls. in 20 minutes through open tubing, total depth 3,647 feet. Yount Lee Oil Co.'s No. 4-A Davis, top sand 3,558 feet, initial production 83 bbls. per hour through three-quarters-inch tubing choke, total depth 3,576 feet; No. 3 J. L. McGrede, top sand 3,531 feet, initial production 88 bbls. per hour through 1-inch tubing choke, total depth 3,551 feet.

H. L. Barrett's No. 1 J. S. Bean, top sand 3,533 feet, initial production 75 bbls. per day pinched, total depth 3,603 feet. Gulf Production Co.'s No. 12 S. Hilburn, top sand 3,521 feet, initial production 90 bbls. per hour through three-fourths inch tubing choke, total depth 3,535 feet. Humble Oil & Refining Co.'s No. 14-B S. S. Laird, top sand 3,559 feet, initial production 75 bbls. per day pinched, total depth 3,627 feet. C. L. McMahon's No. 1 J. King, top sand 3,644 feet, initial production 78 bbls. per hour through open 2-inch tubing choke, total depth 3,649 feet. Rajor Oil Corp.'s No. 1 A. C. McComie, top sand 3,768 feet, initial production 50 bbls. per hour through three-fourths inch tubing choke, total depth 3,771 feet. Paul L. Miller's No. 2 Ben Laird, top sand 3,537 feet, initial production 75 bbls. per day pinched, total depth 3,564 feet. Moore and others' No. 1 J. W. James, top sand 3,552 feet, initial production 75 bbls. per day pinched, total depth 3,595 feet.

Pelican Natural Gas Co.'s No. 4 Spear and Laird, top sand 2,630 feet, initial production 35 bbls. in 25 minutes through 2-inch tubing choke, total depth 3,641 feet. Petroleum Finance Co.'s No. 3 Lacy, top sand 3,560 feet, initial production 41 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,575 feet. Shell Petroleum Corp.'s No. 15 Watson, top sand 3,577 feet, initial production 18 bbls. per hour through tapered tubing, total depth 3,657 feet. Steen Drilling Co.'s No. 5 W. D. Lacy, top sand 3,667 feet, initial production 36 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,673 feet. Stroube and Stroube's No. 1 Powder Horn, top sand 3,570 feet, initial production 75 bbls. per day pinched, total depth 3,624 feet. Travis and Wair's No. 1 A. B. Loughridge, top sand 3,722 feet, initial production 75 bbls. per day pinched, total depth 3,778 feet. Walters and others' No. 1 J. A. Knowles, top sand 3,622 feet, initial production 65 bbls. in 30 minutes through 1½-inch tubing choke, total depth 3,630 feet.

Red River County

Dropleman and Bundy's No. 1 Cunningham, dry and abandoned, total depth 2,756 feet.

Rusk County

Gulf-Devonian's No. 3-A Christian, top sand 3,600 feet, initial production 114 bbls. per hour through three-fourths inch tubing choke, total depth 3,646 feet. Humble Oil & Refining Co.'s No. 2 C. W. Moore, top sand 3,642 feet, initial production 48 bbls. per hour through three-fourths inch tubing choke, total depth 3,665 feet. No. 2-A J. T. Sexton, top sand 3,637 feet, initial production 32 bbls. per hour through three-fourths inch tubing choke, total depth 3,717 feet. Stanolind Oil & Gas Co.'s No. 2 Terrell, top sand 3,689 feet, initial production 139 bbls. per hour through open 2-inch tubing choke, total depth 3,693 feet. C. L. Archer's No. 1 J. H. Stewart, top sand 3,791 feet, initial production 35 bbls. in 20 minutes through 1¼-inch tubing choke, total depth 3,794 feet. Bailey and Trimble's No. 1 E. B. Alford, top sand 3,614 feet, initial production 5 bbls. per hour on pump, total depth 3,725 feet. Blackwell Oil & Gas Co.'s No. 4 W. P. Moore, top sand 3,628 feet, initial production 60 bbls. in 17 minutes through open tubing, total depth 3,657 feet. Deep Rock Oil Co.'s No. 5 Stovall, top sand 3,588 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,653 feet. R. W. Fair's No. 2 Fair, top sand 3,638 feet, initial production 65 bbls. in 30 minutes through open tubing, total depth 3,666 feet.

Falcon Oil Co.'s No. 2 Perkins, top sand 3,606 feet, initial production 80 bbls. in 30 minutes through open tubing, total depth 3,632 feet. Gulf Production Co.'s No. 5 Cashen, top sand 3,779 feet, initial production 95 bbls. per hour through three-fourths inch tubing choke, total depth 3,784 feet. Humble Oil & Refining Co.'s No. 3-B Silvey, top sand 3,691 feet, initial production 81 bbls. per hour through three-fourths inch tubing choke, total depth 3,698 feet. H. L. Hunt's No. 1-B H. C. Maxwell, top sand 3,721 feet, initial production 165 bbls. per hour through open tubing, total depth 3,756 feet. Lion Oil & Refining Co.'s No. 6-A Brooks, top sand 3,614 feet, initial production 100 bbls. per hour through open tubing, total depth 3,715 feet; No. 5 B. Brooks, top sand 3,650 feet, initial production 40 bbls. per hour through tubing, total depth 3,750 feet. L. J. McMurray' and others' No. 2 R. W. Fair, top sand 3,644 feet, initial production 65 bbls. per hour through three-fourths inch tubing choke, total depth 3,663 feet. Marr Drilling Co.'s No. 1 Wheelis, top sand 3,780 feet, initial production 74 bbls. per hour through one-half inch tubing choke, total depth 3,784 feet.

Mid-Kansas Oil & Gas Co.'s No. 3 Joe Mills, top sand 3,621 feet, initial production 160 bbls. per hour through open tubing, total depth 3,665 feet. Oliphant's No. 2 Alford, top sand 3,713 feet, initial production 37½ bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,719 feet. I. P. O'Neal's No. 1 W. O. Alford, top sand 3,830 feet, initial production 150 bbls. per hour through 2-inch tubing choke, total depth 3,834 feet. Phillips and Bennett and others' No. 1 E. B. Alford, top sand 3,611 feet, initial production 10 bbls. per hour through open tubing, total depth 3,705 feet.

Smith and Torrans' No. 3 H. Torrans, top sand 3,657 feet, initial production 35 bbls. in one-quarter hour through 1½-inch tubing choke, total depth 3,668 feet. Sullivan and Burch's No. 1 E. B. Alford, top sand 3,615 feet, initial production 18 bbls. per hour by heads, total depth 3,690 feet. Sun Oil Co.'s No. 3 S. A. Selman, top sand 3,637 feet, initial production 64 bbls. per hour through open tubing, total depth 3,686 feet. Ward Oil Co.'s No. 4 J. M. Finney, top sand 3,719 feet, initial production 65 bbls. per hour through tubing, total depth 3,749 feet. Carl G. Wilie's No. 2 S. E. Sanders, top sand 3,712 feet, initial production 65 bbls. in one-half hour through open tubing, total depth 3,742 feet.

Arcadia Oil & Refining Co.'s No. 1-B Green, top sand 3,775 feet, initial production 85 bbls. in one-half hour through open tubing, total depth 3,781 feet. East Texas Finance Co.'s No. 1 S. S. Cooke, top sand 3,743 feet, initial production 90 bbls. in one-half hour through open tubing, total depth 3,746 feet. E. R. Liner's No. 1 Wolford, top sand 3,752 feet, initial production 75 bbls. in one-half hour through open tubing, total depth 3,766 feet. London Petroleum Corp.'s No. 1 S. S. Cooke, top sand 3,709 feet, initial production 50 bbls. in one-half hour through 1-inch tubing choke, total depth 3,712 feet. Dozier and others' No. 1 S. S. Cooke, top sand 3,738 feet, initial production 125 bbls. in 20 minutes through open tubing, total depth 3,740 feet.

Upshur County

Fleetborn Oil Co.'s No. 3 J. K. Edwards, top sand 3,657 feet, initial production 80 bbls. in one-half hour through open tubing, total depth 3,684 feet. Humble Oil & Refining Co.'s No. 1-B J. T. Fuller, top sand 3,634 feet, initial production 50 bbls. per hour through three-quarters-inch tubing choke, total depth 3,650 feet. Magnolia Petroleum Co.'s No. 4 N. W. Blackwell, top sand 3,686 feet, initial production 108 bbls. per hour through three-quarters-inch tubing choke, total depth 3,687 feet. Pace and Mitcham's No. 2 Adkins, top sand 3,752 feet, initial production 180 bbls. in 24 hours, total depth 3,778 feet. Sabinas Petroleum Co.'s No. 6-C T. M. Collins, top sand 3,640 feet, initial production 73 bbls. per hour through three-quarters-inch tubing choke, total depth 3,665 feet. Sun Oil Co.'s No. 2 Ramey, top sand 3,733 feet, initial production 75 bbls. per day pinched, total depth 3,749 feet.

J. A. Woods and others' No. 2 A. J. Sanders, top sand 3,642 feet, initial production 90 bbls. per hour through three-quarters-inch tubing choke, total depth 3,663 feet. Cranfill & Reynolds' No. 1 Milton Rash, top sand 3,719 feet, initial production estimated good for 125 bbls. per day, total depth 3,729 feet. Top Austin chalk 3,650 feet, base Austin chalk 3,702 feet. Dunnigan's No. 1 D. F. Guest, dry and abandoned, total depth 3,850 feet. J. W. Love's No. 1 Bain, dry and abandoned, total depth 3,798 feet, top sand 3,770 feet. Pilot Oil Co. and Snebold's No. 1 J. D. Ray, top Georgetown lime 4,021 feet, dry and abandoned, total depth 4,028 feet. Stanolind Oil & Gas Co.'s No. 1 Newson, dry and abandoned, total depth 3,995 feet, top Georgetown lime 3,976 feet, top sand 3,800 feet.

Van Zandt County

A. A. Phillips' No. 1 C. W. Morris, dry and abandoned, total depth 3,081 feet.

DAILY AVERAGE OIL SHIPMENTS FROM EAST TEXAS

Week Ending February 6

Shipments Through Main Trunk Lines

Company, size, location—	Amount
Arkansas, P. L., 8-in., Shreveport	12,229
Atlantic P. L., 10-in., Atreco	16,546
Atlas P. L., 8-in., Shreveport	1,735
Gulf P. L., 2-8-in., Oklahoma	11,842
Gulf P. L., 2-8-in., Port Arthur	17,224
Humble P. L., 2-10-in., Shreveport	42,890
Humble P. L., 2-8-in., Todd	27,219
Liberty P. L., 8-in., Rusk	1,968
Magnolia P. L., 10-in., Center	29,733
Magnolia P. L., 12-in., Corsicana	28,302
Shell P. L., 10-in., Houston	20,236
Sinclair Texas P. L., 12-in., Teague	22,077
Sun-Yount Lee P. L., 10-in., Sun City	20,831
Texas P. L., 10-in., Douglass	19,749
Texas-Empire P. L., 12-in., P. Arthur	53,822
Total	326,416

Shipments to Refineries

Arrow Ref., Overton	S.D.
Beacon Ref., Henderson	890
Boone Ref., Arp	400
Central Ref., Friars Switch	S.D.
Constantin Ref., Overton	S.D.
Diamond Ref., Overton	647
East Texas Ref., Longview	4,546
East Texas Ref., Friars Switch	5,331
Gladetex Ref., Gladewater	210
Gladewater Ref., Gladewater	250
Kilgore Ref., Kilgore	321
W. B. Mackey Ref., Gladewater	250
Overton Ref., Overton	786
Petroleum Ref., Longview	S.D.
Sinclair Oil & Gas, Longview	897
Slack Ref., Camp Switch	S.D.
Southern Oil & Ref., Reed Switch	410
Taylor Ref., Tyler	874
Total	15,812

Shipments by Tank Car

East Texas Ref. from Longview	145
Tyler Pipe Line from Tyler	451
Total	596
Total daily average distribution	342,823
Total daily average production	327,088
Daily average from storage	15,735

SOUTHWEST TEXAS GEOLOGISTS

Geologists of Southwest Texas will hold their next regular monthly meeting in Corpus Christi and a program of discussion on various phases of the geology of Southwest Texas is being arranged. It will be the first Monday in March.

W. E. HUNTER DIES

W. E. Hunter, 43, chief clerk for the Texas Pipe Line Co. at Wichita Falls, Tex., died Monday morning after an illness of 10 days.

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 77)

ASSOCIATED OIL CO. PRICES

Associated Oil Co. prices effective June 20 are as follows:

Ventura Avenue, 22 gravity, 58 cents, with 2 cents added for each degree upward to and including 30 gravity, which is 74 cents.

Kettleman Hills—The Associated Oil Co., effective at 7 a.m. February 5, 1932, withdrew and canceled any and all prices heretofore published and in effect for Kettleman Hills oil.

Potrero, 24 gravity, 69 cents, with 2 cents added for each degree upward to 34 gravity which is 89 cents.

General Petroleum Co. in Kettleman Hills, effective January 1, 1932: 33-33.9 degrees, 66 cents; 34-34.9 degrees, 68 cents; 35-35.9 degrees, 70 cents; 36-36.9 degrees, 72 cents. 37-37.9 degrees, 74 cents; 38-38.9 degrees, 76 cents; 39-39.9 degrees 78 cents.

UNION OIL CO. OF CALIFORNIA

Crude Oil Prices for Its Purchases at the Well for Crude Produced in Strict Accordance With the Production Allocations Made by the California Statewide Curtailment Committee Effective 7 a.m., June 20, 1931

(All gravities above these quoted take highest price for that field)

Gravity °A.P.I.	Signal Hill	Alamitos Heights Seal Beach	Huntington Beach	Athens, Rosecrans, Domingues	Torrance	Santa Fe Springs	Playa Del Rey* E. Coyote	Richfield	Montebello	Santa Paula	Orcutt	Coalinga	Lost Hills	McKittrick, Kern River, Sunset-Midway, Elk Hills, Buena Vista Hills	Gravity °A.P.I.
11-13.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$.50	11-13.9
14-14.9	$ .65	$ .65	$ .65	.....	$ .65	.....	.....	$ .65	$ .65	$ .65	$ .55	$ .55	$ .55	.55	14-14.9
15-15.9	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	.55	15-15.9
16-16.9	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	.55	16-16.9
17-17.9	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	.55	17-17.9
18-18.9	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	.55	18-18.9
19-19.9	.65	.65	.65	.....	.65	.....	$ .65	.65	.65	.65	.55	.55	.55	.55	19-19.9
20-20.9	.65	.65	.65	.....	.65	.....	.65	.65	.65	.65	.56	.55	.55	.55	20-20.9
21-21.9	.65	.65	.65	.....	.65	.....	.66	.66	.65	.65	.57	.55	.57	.55	21-21.9
22-22.9	.65	.65	.65	.....	.66	.....	.67	.67	.65	.66	.59	.55	.59	.56	22-22.9
23-23.9	.67	.67	.67	.....	.67	.....	.68	.68	.65	.65	.61	.55	.60	.58	23-23.9
24-24.9	.69	.69	.69	$ .69	.68	$ .65	.69	.69	.65	.66	.63	.55	.62	.61	24-24.9
25-25.9	.71	.71	.71	.71	.70	.65	.70	.70	.65	.68	.65	.57	.64	.64	25-25.9
26-26.9	.73	.73	.73	.73	.....	.65	.....	.72	.....	.70	.67	.....	.66	.66	26-26.9
27-27.9	.75	.75	.75	.75	.....	.68	.....	.74	.....	.72	.....	.....	.67	.68	27-27.9
28-28.9	.77	.....	.....	.77	.....	.71	.....	.....	.....	.74	.....	.....	.69	.71	28-28.9
29-29.9	.79	.....	.....	.79	.....	.73	.....	.....	.....	.76	.....	.....	.71	.74	29-29.9
30-30.9	.81	.....	.....	.81	.....	.75	.....	.....	.....	.78	.....	.....	.72	.76	30-30.9
31-31.9	.....	.....	.....	.83	.....	.78	.....	.....	.....	.....	.....	.....	.....	.....	31-31.9
32-32.9	.....	.....	.....	.85	.....	.80	.....	.....	.....	.....	.....	.....	.....	.....	32-32.9
33-33.9	.....	.....	.....	.87	.....	.83	.....	.....	.....	.....	.....	.....	.....	.....	33-33.9
34-34.9	.....	.....	.....	.89	.....	.85	.....	.....	.....	.....	.....	.....	.....	.....	34-34.9

*Subject to a gathering charge of 5 cents per barrel.

RECORDS INDICATE NEW WELLS ESSENTIAL

(Continued from Page 17)

cox wells will make a lot of sand along with the oil.

The upper part of this Wilcox sand is quite hard and stands up well, but as the hole is drilled beneath this upper stratum the sand is less consolidated and several wells have made from 5,000 to 7,000 bbls. of sand per day. It has been estimated that a well in this area flowing 70,000 bbls. of oil and 150,000,000 feet of gas per day, with 150 pounds pressure at the master gate would be required to have a velocity of over 450 miles per hour at the top of the casing to deliver this oil and gas.

Mechanical Problem

This extremely high velocity of fluid and sand has presented a mechanical problem for the engineers and manufacturers in providing suitable well-head connections. Plugs in beans in the flow line have been cut out in 40 minutes and master gates completely ruined in four hours in operating some of these wells making sand.

Manufacturers and operators know how to provide equipment and produce these wells under normal flowing conditions that are safe, but this is imposing a limit upon the rate of production the well can make and this in turn will place a constriction upon the amount of oil that this portion of the Oklahoma City Field can safely produce in any one day.

Not only is the operator faced with the mechanical problems at the casinghead, but it has been estimated that the amount of sand that has actually been produced from some of these wells is equal to a cavity underground 9 feet in diameter and 130 feet deeper. This space is not uniform in shape but it does present a serious handicap to high rate of production for if water should break through into this hole repairs would be difficult to make. Wise operators advocate restricted rate of production for all Wilcox wells and the use of tubing and back pressure to regulate the flow per day.

This brief outline of conditions in Oklahoma City Pool should make it quite clear to the operator and executive who is handling wells in that area that care must be exercised in securing the future oil from his properties if the amount recovered is to be sufficient to repay him for his original investment and give him a profit. Some feature, other than proration, will operate to restrain rate of production from all wells in Oklahoma City and it is estimated that 200,000 bbls. of oil per day will be the maximum rate of withdrawal that can be had if investments and wells are to be safeguarded and the maximum amount of oil recovered from this field.

Seminole Area Under Water Drive

The other area in Oklahoma that has been regarded as capable of producing a large quantity of oil if needed is the Seminole district. This is made up of a number of separate pools and the last potential gauge secured in November placed its capacity at about 313,787 bbls. per day. This gauge was taken over a 10-day period and 50 per cent of the potential has been made the allowable daily production or about 150,000 bbls.

A study of the potential tests indicate that a great number of these wells showed a gradual increase in daily production rate over the 10-day period and in this way the final total potential was built up to the figure given above. However, a study of water contour maps of these fields shows quite clearly that those wells that increased their rate of flow during the test period were doing so largely because of a very active water drive pushing the oil into the well.

Operators in the Seminole area know about this water movement and are therefore guarding against it with all known means. To secure the maximum amount of oil from that still remaining in the reservoirs it is agreed that a restricted rate of flow per well per day is absolutely essential and without doubt it will be applied to the great majority of the wells regardless of future proration orders.

This condition is rapidly reducing the Seminole area to a low rate of daily production and removing it from fields from which increased daily oil production could be secured if conditions should warrant it in the future. The 150,000 bbls. allowable now given to that field will be very difficult to maintain and this area can be classed among the fields that are on a fairly rapid decline rate of production for the future.

Hobbs, New Mexico, Field

The Hobbs, New Mexico, Field has always been a restricted production area and every care has been exercised in taking oil from it to regulate the water movement and insure maximum ultimate recovery of oil.

In spite of everything that has been and is still being done in the field water has put in its appearance along the west edge and 12 wells are now making some water along with the oil. These are in addition to wells in the extreme south end of the field that had water when finished.

In addition to developing a water movement a number of low bottom hole pressure areas have shown up in this structure and on the top of the structure some wells have made a relatively high gas-oil ratio. Steps were taken to cut this gas-oil ratio and some success has been met with but the water movement still continues from the west and if the rate of oil withdrawal is increased beyond 40,000 bbls. per day it is feared that parts of the field will quickly go to water and the oil-water ratio will be so high that handling the production will be too costly.

With the experience gained in developing the Hendrick Pool in Winkler County, Texas, to draw upon the operators in the Hobb, New Mexico, Pool are more inclined to restrict the rate of oil production in the future than to increase it, and it is therefore quite safe to place the maximum amount of oil that can be delivered from Hobbs Pool this summer at 40,000 bbls. per day. The field is now producing about 30,000 bbls. per day under seasonal curtailed demand.

Yates Pool, Pecos County, Texas

When this pool was first opened it created as great a sensation in the petroleum industry as the recently discovered East Texas Field did, but because of the fact that those engaged in the production of petroleum have become so used to new fields and boom conditions it is now relegated to the background in the thoughts of the executives and oil buyers and not looked upon as playing a major part in the future production possibilities of this country.

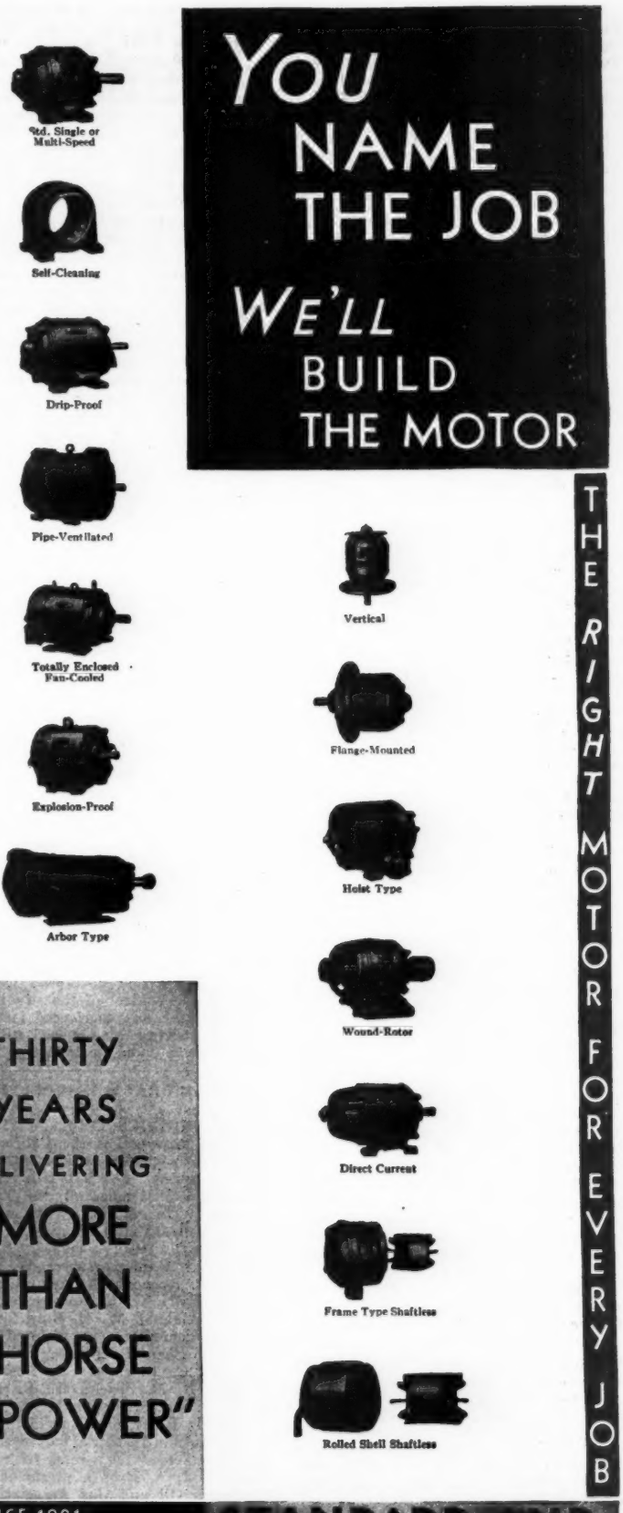
However, such is not the case, for there are still a lot of very large potential wells in the Yates Pool, wells that can now make a great deal more oil in 24 hours than any well that has so far been discovered in East Texas could have made at any time on open flow. This is not stated to discredit the capacity of East Texas wells but simply to point out how quickly the industry forgets the threat of 300,000 bbls. per day that were brought in not so long ago in the Yates Pool.

This condition has all been brought about because the operators in the Yates Pool have always worked together to conserve the natural energy of that reservoir and at no time have any wells been produced at such a rate as to lower bottom hole pressure in its vicinity below that of the average pressure of the entire pool. It is true that there are certain local areas of low pressure but they are known and mapped and are given consideration in connection with future rate of production for the field.

Engineering Report

In a recent report the Yates Pool Engineering Committee states in part as follows:

"Reservoir pressure decline will be minimized by reducing the field outlet. The water hazard is not seriously increased by changes in outlet below 95,000 bbls. a day. The gas-oil ratios decrease as the field outlet is increased until the latter is 100,000 bbls. a day. Below 75,000 bbls. a day field allowable the gas-oil ratios become noticeably higher. Therefore, from the engineering standpoint, the balancing of three factors leads to the conclusion that the ideal



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Address .....

field allowance lies between the approximate limits of 75,000 and 95,000 bbls. a day. The three factors are variable with time and field outlet; therefore the proposed ideal limits may vary in the future.

"Going into the water encroachment angle, the engineers found that open flow tests materially increase the number of wells making water; that sustained allowance rates approaching 130,000 bbls. a day will increase the number of wells making water; that moderate changes from the present allowable rate of production will not seriously increase the water hazard; that the present rate of water advance is less than the rate of oil and gas withdrawal; and that either a general or local lowering of reservoir pressure will increase the rate of water encroachment."

These findings will therefore place the maximum rate of production for this field at 100,000 bbls. per day for the coming summer, and for economical reasons the major operators in the Yates Pool feel quite certain that the wells there will not be required to produce beyond that rate.

Van Pool, Texas

This pool has been operated as a unit for some time and while its capacity is probably as great as 500,000 bbls. per day it is understood that it will not be produced at a rate greater than 50,000 bbls. daily.

This oil is being produced from the Woodbine sand and it is known that water is in this same formation surrounding the field. A check of the hydrostatic head of this water as made by engineers from outcrop elevations and the actual pressure in a well drilled into water was very close and indicates that this water will move through the structure as the oil and gas is withdrawn.

To prevent too rapid a movement of this water restricted production will be maintained on the producing wells and the above daily production is being used in the estimate for summer delivery.

East Texas Pools

This field has been discussed at some length in articles that have appeared in The Oil and Gas Journal from time to time until it would seem that there is little more to be said about it. In this week's issue of The Oil and Gas Journal an article by O. L. Brace is printed that gives actual core records and again estimates ultimate recoveries to be expected.

Regardless of the amount of oil that may be estimated as recoverable the one striking feature of Mr. Brace's article is the character of the producing zone that has been cored. A study of these core records indicate that water movement will of necessity be slow in some parts of the field. As the oil is not fully saturated with gas the energy from that source is low.

It therefore must follow that the daily rate of producing from the wells in the field will be limited, not necessarily by proration, but more because of lack of effective energy to drive the oil to the wells rapidly.

It is estimated that the East Texas Pool will do well to make 300,000 bbls. per day during this coming summer because of these limitations placed upon it by nature and that figure is being used in the following summary of available oil from fields in this country.

Summary and Conclusions

So much has been said about the potential reserves of the oil fields of this country and estimates as high as 13,500,000,000 bbls. of recoverable oil made that the mechanical problems involved in securing this oil at the required rate to meet the daily refinery needs have been overlooked.

Without discrediting the amount of oil estimated to be in reserve in the various major pools it is safe to state that the amount of oil that can be produced and delivered to pipe lines during the coming summer will be above 2,281,160 bbls. daily.

If the estimate of runs to refinery stills is placed at 2,350,000 bbls. per day and the amount of oil available from the wells is only 2,281,160 bbls. per day there will be a deficiency of 68,840 bbls. daily or about 3 per cent of the refinery requirements.

If the operators have drilled only 6,703 oil wells in 1931, 345 less than were completed in 1898, when there were practically no automobiles to require gasoline, and at the end of 1931 there were 28,164 less wells reported as active it must follow that the possible rate of producing oil during the year 1932 has been materially reduced.

At the end of 1930 it was reported that there were 327,268 active wells in this country and at the same period in 1931 only 299,104, a decrease of 28,164 wells. It does not follow that all of these missing wells have been pulled, plugged and abandoned, but a partial check of Rocky Mountain states, Arkansas, Texas and Oklahoma indicates that there were 5,016 new oil wells completed in those areas while 5,005 old wells were plugged.

The principal thing to be deduced from this analysis of the present situation is that the industry has reached the end of its vacation in prospecting for new oil pools. When available daily production practically equals daily requirements, and as many wells are being plugged as drilled, the time has arrived when new work should be started and new pools explored. This does not necessarily mean that as soon as found they should be exploited and a flood of oil rushed on the market regardless of demand, but this is just what will happen if the major oil companies who desire to see a stabilized condition continue to exist do not act promptly. As oil becomes scarce with increase of gasoline demand in the spring prices must go up and with increase in crude prices the promoter and wildcatter will become active.

In the past it may have been good policy to allow the wildcatter to operate unrestricted and find the oil which could then be bought by the refiners at practically their own terms, but that day of haphazard exploration has passed. If the major oil companies are to be assured of an adequate future supply of oil they should put their geologists to work to explore possible new areas, and their drillers to work trying to prove up reserves. When they do it they will themselves be in control of the situation and an orgy such as experienced last spring when East Texas was opened will not be again thrust upon the industry.

CALIFORNIA ASSOCIATION

LOS ANGELES, Calif., Feb. 13.—The board of directors of the California Oil and Gas Association at its monthly meeting approved the following standing committees: Member of the executive committee (in addition to the president, two vice presidents and manager), L. P. St. Clair; advisory counsel, Theodore Martin; assistant treasurers, W. E. Bintliff, J. P. Auchenbach; audit committee (reappointed), G. R. Forster, chairman, James Mainland, W. E. Bintliff; public relations committee (reappointed), A. L. Weil, chairman, Paul Gregg, vice chairman, P. C. Black, J. P. Loeb, Rush Blodget, R. M. Searles, F. F. Thomas, Jr., C. C. Stanley, Oscar Sutro.

Amos L. Beaty, president of the American Petroleum Institute, will be the principal speaker at the twenty-fifth annual banquet. J. A. Brown, president of the California Oil and Gas Association and of the General Petroleum Corp. of California, will also speak.

T. J. LAWHON DIES

HOUSTON, Tex., Feb. 15.—Thomas J. Lawhon, general attorney for The Texas Company, Houston, died Friday at a Houston hospital following an illness of several months. Mr. Lawhon, who was 56 years old, had been associated with the legal department of The Texas Company since 1913 when he moved to Houston from Williamson County, where he had practiced law and held a position of county judge. He was a native Texan and received his entire education in this State, being graduated from the law department of the University of Texas in 1901.

Rathbone Gas Field Develops High Grade Oil at Shallow Depth

By Special Correspondent

CORNING, N. Y., Feb. 13.—The discovery of oil in a well in the Rathbone gas field in Steuben County in the past week is the most interesting news out of the New York-Pennsylvania gas field, although word of an 11,000,000-foot gasser in the Tioga Field added much to it. Clyde Campbell, drilling for gas on the Sherwood farm in the Rathbone Field, found oil at 825 feet. The well tested 12 bbls. in 24 hours but later fell off to 4 bbls. a day. The well was shot late in the week and was being cleaned out preparatory to another test. The oil is said to be a straw color and of high gravity. The Rathbone Field is located 22 miles west of Corning. This is not the first oil discovery in Steuben County, the western part of which forms the eastern end of that scattered pool area known as the Allegany Field, which is made up of a score of small pools producing high gravity oil of the Pennsylvania grade.

The 11,000,000-foot gasser was drilled by the Mutual Gas Co. on the Dana Learn farm in Farmington Township, Tioga County. It was completed at a depth of 4,108½ feet. It actually tested 11,776,000 feet in 24 hours.

The Shaler Oil Co. has abandoned as a failure its No. 1 L. Gee in Middlebury Township, Tioga County, at a depth of 5,308 feet. It got Oriskany sand at 5,234 feet but it was barren.

The Morris Run Coal & Oil Co.'s No. 1 W. J. Butters, in Union Township, Tioga County, was dry and abandoned at 5,045 feet.

The East Penn Development Co.'s No. 1 Linus Wilston, in Farmington Township, tested 4,000,000 feet of gas in 24 hours from sand at 4,051-72 feet.

Workman and others drilled into salt water in their test on the C. M. McCallum farm, Farmington Township, at a depth of 4,103 feet. It was drilled to 4,110 feet and shut down for orders.

In Bradford County, which lies east of Tioga County, Mosherville Oil & Gas Co. abandoned a test on the S. Braisted farm, in Wells Township, at 4,750 feet, and the Schellheimer test on the Mittendorf farm in Cherry Township was also abandoned, depth not ascertained. The Penn-York Gas Co.'s No. 1 Hettick, in Towanda Township, was abandoned at 5,227 feet. Susquehanna Oil & Gas Co.'s No. 1 McKelvey, in Bradford Township, was dry and abandoned at 6,500 feet. Duff and others' No. 1 Olson, in Columbia Township, was abandoned at 5,690 feet.

The deepest test drilling in Bradford County at this time is Penn-York Gas Co.'s No. 1 Stevens, in Brown Township, which was last reported drilling cement at 6,256 feet.

PROPOSE LUB OIL TAX

CINCINNATI, Ohio, Feb. 13.—Supplementing the state tax on gasoline, which nets approximately $8,500,000 to the road fund, the first of Governor Ruby Laffoon's revenue bills was introduced yesterday in Kentucky. It proposes a tax of 5 cents a quart on all motor oils and 5 cents a pound on grease used on motor vehicles in Kentucky. An estimated income of $1,000,000 is expected from this tax.

DISMISS RECEIVER SUIT

HOUSTON, Tex., Feb. 15.—A petition asking that a receiver be appointed for the Moody-Seagraves Co. was dismissed by District Judge Ewing Boyd. George D. Sears, attorney for W. L. Goldston, the petitioner, asked Judge Boyd to dismiss the suit at defendant's cost. Sears indicated the suit was settled out of court.

Goldston, vice president and geologist for the Cranfill-Reynolds Co., claimed the Moody-Seagraves Co. owed him $110,000 on a $150,000 note for purchase of Cranfill-Reynolds stock.

FIVE-YEAR PROGRAM BEST FOR EAST TEXAS

TYLER, Tex., Feb. 15.—Charles F. Roeser, president of the Texas Oil and Gas Conservation Association, and E. H. Eddleman, executive vice president of that organization, addressed a meeting of approximately 150 operators and landowners here. Mr. Roeser admonished the producers in the field to uphold orderly production, and solicited the help of producers and landowners in conserving oil and gas. He said that neither he nor the Texas Oil and Gas Conservation Association ever favored compulsory unitization of this or any other field.

Mr. Roeser stated that the recoverable oil in Texas is estimated at 4,000,000,000 bbls. from the fields already developed, or a 12 years' supply. He also cited the fact that there was 40,000,000 bbls. of empty storage in the State at the present time.

"Curtailment of production must be successful if the independent operator is to survive," said Mr. Roeser, "and we should get $1.50 per barrel for our oil to make a fair return on our investments, as it costs over $1 per barrel to produce."

West Texas was named as a district which would have greatly benefited by orderly production of all pools in that district and if oil and gas is dissipated in East Texas, the Southwest will stand a loss of 500,000,000 bbls. according to estimates based on figures collected on fields in the State and the new producing area.

Mr. Roeser said that large and small companies are necessary in the oil industry, and that no major company should be attacked unless gross negligence or fault is shown. He won considerable applause when he lauded Governor Sterling for declaring martial law in East Texas. He was very vehement against those producers who had withdrawn several million barrels of oil from their leases without accounting for it, this being a great injustice to the land and royalty owners. He ended his talk by stating that a five-year program of developing the East Texas Field would be the best method for drilling and producing the field, employes, companies, landowners and the entire district benefiting more by such a plan than by too rapid development.

Mr. Eddleman spoke regarding taxation of the oil industry, stating he believed the oil properties in East Texas should be taxed like all other properties, but equitably, and that operators and companies operating in the district should choose a committee to study taxation of properties in the district, and start to work immediately on procuring equitable taxes.

He also warned the towns and counties in the district to be careful in voting large bonds for improvements while flush production of the field and business was at its height, for after the "boom" was over these bonds would still have to be paid for, and would cause a great hardship on the people. This has been done in many places in Texas, and the people are suffering for it. Overbuilding in East Texas should be prevented.

TANK WAGON CHANGES

(Continued from Page 78)

fective January 11 advanced gasoline tank wagon price 2 cents at Texarkana.

Standard Oil Co. of Kentucky effective February 5 reduced gasoline tank wagon price 1 cent at Jackson, Miss.; effective February 1 same company reduced kerosene tank wagon price 2 cents at Savannah, Ga.

Continental Oil Co. effective February 1 advanced gasoline tank wagon price at Twin Falls, Ida., to 21 cents and service station to 24 cents and 3½-cent allowance off tank wagon deliveries to dealers was discontinued; effective February 11 company reduced gasoline tank wagon price 3 cents at Cheyenne, Wyo., eliminating 3-cent allowance to dealers.

Standard Oil Co. of Louisiana effective February 5 advanced gasoline service station price one-half cent at New Orleans, La., and 2 cents at Alexandria, La.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

HOW WERE SANDS LAID DOWN?

Were the oil-producing strata once laid down on the level around the world or were they laid down in basins with similar conditions existing around the world? Is the general trend of oil migration to the north?—H. C. P.

While oil-producing formations of similar age are found in countries of the eastern and western hemisphere and they therefore were laid down at approximately the same time, there is no such thing as a continuous stratum of any age that extends around the earth. For instance rocks of Pennsylvanian age produce oil in the western hemisphere in the United States and probably Bolivia, but nowhere else. In the eastern hemisphere the Pennsylvanian is productive in England only.

Of the younger rocks the Miocene is productive in Texas, Louisiana, Arkansas, San Joaquin, Calif.; Santa Maria, Calif.; Ventura, Calif., and Los Angeles Basin; while in South America it produces in Venezuela, Peru and Argentina, and also in the Island of Trinidad and in the Tehuatepec, Mexico. The Miocene produces in Czechoslovakia, Galician Poland, Rumania, Italy, Baku, U.S.S.R., Grozny, U.S.S.R., Maikop, U.S.S.R., Egypt and Algeria on the eastern hemisphere.

This gives some idea of the distribution of oil in formations of the same age, but in all cases a number of conditions were necessary to permit the formation and accumulation of oil in these rocks. These conditions were dependent largely upon local conditions at the time of formation of the oil and its accumulation.

There is no general trend of oil migration in this or any other country. So little is actually known about the migration of oil that no definite principles can be laid down covering this phenomenon, but enough is known to be certain that no general trend of movement exists.

TO GET BOTH OIL AND GAS

On this page of The Oil and Gas Journal of January 21 an inquirer described a situation which had arisen in a well which, when drilled in, was a dry gas well. A string of 2-inch tubing was run and an anchor packer was set in the cap rock at a depth of 1,370 feet. The packer did not shut off the gas, so 400 feet of sand pumpings was dumped on top of it. This stopped all leaks, but later the well stopped producing gas and 1,000 feet of oil was found in the hole. The problem of removing this oil and keeping it out of the well thus was presented. It was believed that the tubing and packer could not be pulled without parting the tubing. Suggestions as to the best procedure under the circumstances were asked. These were given, but in the meantime another method has been obtained from R. R. Hawkins, engineer for The Texas Company, and this is offered here.

Because of the fact that the well immediately in question, which was originally a gas well, filled up with 1,000 feet of oil it safely may be assumed that the rock pressure is about equal to the head of this oil or about 350 pounds. Certainly not more than that amount or the well would have filled up with more oil or flowed naturally. As it evidently is in a gas field it is further assumed that outside gas will be available, but at what pressures we do not know.

With these things to start from it is suggested that the operator get about 1,000 feet of three-quarter inch pipe and 400 feet of 1-inch pipe with which to make a small tapered string of flow pipe to go inside the 2-inch tubing which presumably is still in the well.

Make up about 600 feet of the three-quarter inch tubing and run it in the well, shutting in the casinghead between the 2-inch tubing and the casing. Then connect the gas line to the 2-inch tubing and if 100-pound pressure gas is available run a very small quantity of it between the 2-inch and the string of three-quarter inch. This should start the oil flowing out through the small string.

Be certain that the volume of 100-pound gas admitted between the 2-inch and three-quarter inch tubing is very small, because if a large amount is used it will tend to by-pass the oil and seek a quick outlet through the three-quarter inch tubing and the desired results will not be attained in removing the oil from the well.

Having removed the upper 300 feet of oil from the 2-inch tubing, add about 100 feet more of three-quarter inch tubing and again lower it into the oil. Then apply the 100-pound gas in small quantities to remove this second body of oil.

Repeat this operation of adding a few feet of three-quarter tubing and producing the oil until all of the 1,000 feet of three-quarter inch tubing is in the well, then add the 1-inch tubing to form the upper part of the flow string.

Not knowing the quantity of gas that this well will make it is not possible to determine at what point the well will begin to flow through the small string of tubing due to the natural gas pressure and volume in the well itself. Find some point where this will start and then if the quantity of oil the well makes is proportionate to the volume of gas at the rock pressure of the well it should begin to produce oil and gas through the small tapered string of tubing.

This string of three-quarter inch and 1-inch tubing must be inside the 2-inch tubing to make this system effective and the quantity needed to put this well on a steady production basis can best be determined by actual test.

If gas at pressures in excess of 100 pounds is available at the well head it is possible that the well would start to flow through the tapered string if it is run to the bottom of the hole at first, instead of by degrees as outlined. In other words the actual lift at the well between the fluid level of 1,000 feet and the top of the hole is about 370 feet and if this column of oil weighs .35 pound per foot this will mean that to lift the oil 370 feet will require about 130 pounds gas pressure if friction is ignored.

If gas at 150 pounds pressure is available at the well head it is quite possible that the tapered string could be run to the bottom and the gas supply attached to the 2-inch tubing and the pressure applied to the top of the oil and it would start the oil to flowing from the bottom of the hole through the small tubing.

In the October 8 issue of The Oil and Gas Journal is an article by Mr. Hawkins on "Flowing Oil Wells With Small Strings of Tubing" with a correction to one formula given in the October 22 issue. This article is valuable for general information about this method of flowing small wells.

WHY WAS IT CALLED THAT?

SCOUT

The word "scout" is derived from the old French "escoute," a spy. It long has been used in the army and the navy to designate a soldier or a vessel sent out in time of war to obtain information concerning the enemy's movements, strength, etc. The name was appropriated by the oil industry in its early days to apply to a man assigned to obtain information about wells of rival operators. Stealth and cunning often were employed in getting such information.

With the passing of years the vocation was relieved of its furtive character, and the oil scouts of today hold a well established and important place in the industry. Instead of resorting to sharp practices the scouts of different companies divide an oil field, each covering part of it, and then each gives the others the information which has been given to him freely by oil operators regarding drilling, production, well logs, etc.

WELDING WITH OIL IN LINE

Is it practical to weld a patch over a pit hole in a trunk line with oil standing in the line by the oxygen and acetylene method? We have not had any luck in trying to repair a leak by this method. Any information will be appreciated.—J. N.

Such a job, welding authorities say, is usually a relatively simple one, circumstances altering the precise method employed. One common method is to use a sleeve made from a larger size of pipe (for instance, 10-inch pipe for repairing 8-inch). Such a sleeve is made from a section of larger pipe of the required length, split longitudinally and slipped over the area to be patched. It then is welded at both ends and along the seam.

What is designated as the most simple method and the one oftenest used consists in first shutting off the flow of oil and then cutting out the section of pitted pipe. While the open ends of the line are plugged by stuffing them with mud or some similar substance a new section of pipe of the same length as that of the piece removed is welded into place.

SHOULD HE CLEAN OUT FIRST?

Where it is decided to shut down wells for any reason whatever (because they are unprofitable for the time being perhaps or because of a proration order) is it considered advisable to clean them out first? To what extent is the length of the shutdown a factor in answering this question? Some of the men in this district say cleaning out in this case is good practice, but their arguments are not convincing.—T. O. D.

Having come to the conclusion that a certain well or group of wells can no longer be produced at a profit it is good policy to shut them in until such time as they again can be produced at a profit. Before such action is taken, however, it is good policy to have a complete record of all conditions affecting production from these wells and to make a careful study of those conditions and from such data it can be decided whether it is necessary to give the wells any special cleaning before shutting down.

It ordinarily would not be good business to clean out a large group of wells before shutting them in because this probably would be only adding to an already losing proposition. Certain wells in the group, however, may show by a study of their production records that they would be better cleaned before being shut down.

If a well has leaky casing above the producing sand it would be folly to shut it in and permit this upper water to find its way into the producing horizon and thus kill off the remaining oil. Such a well could be filled with mud or clay up to a point within the casing so that all water accumulation would be above the producing sand body. Later this mud could be removed easily, the sand face cleaned and the well again brought back on production.

The time element enters into the problem of cleaning, but as it is usually an unknown quantity when shutting in the well is under consideration it is difficult to tell how important a part it will play in the future production of the property.

If a well is full of soft sediment held in suspense during active production it is only reasonable to assume that such sediment will settle back against the sand face and clog up the pores of the well when it has filled up with oil and water during the shutdown period and it might be well under such circumstances to bail out all loose material in the well before it is shut down.

This is not introducing a new principle into good production practice for it is now considered necessary to keep a well reasonably free of floating or loose debris, and if it is to be inactive for a time a cleaning out would be in order on general principles.

In most instances it will be found that the final decision regarding cleaning out wells before shutdown will be made by the management of the property and will be based upon cost of doing the work. If too much of an outlay is involved it is probable that orders will be given to shut down the wells without any repairs or cleanout and when the time comes to reopen them under a higher crude oil market they will be given the necessary attention. There usually will be little difference in the cost of doing this work before a shutdown period and doing it afterward. When the wells are ordered again put on production it is to be assumed that prices will justify their operation so money will be available for reconditioning, whereas before the shutdown it might be funds were not available.

Summary of Operations in All Fields for January, 1932

SUMMARY OF ALL FIELDS

	Wells Completed Comp.	Prod.	Dry	Gas
Eastern	150	622	15	34
Central Ohio	45	266	9	24
Lima	6	18	1	3
Indiana	17	180	5	9
Michigan	9	1,035	2	5
Kentucky	30	1,122	9	3
Illinois	6	3	3	0
Kansas	42	13,980	11	4
Oklahoma	63	56,497	25	11
North Central Texas	43	1,596	24	0
E. Cent. and E. Tex.	338	36,554	11	0
E. Texas gas field	3	0	2	1
West Texas	11	1,866	3	0
Panhandle Texas	14	1,504	0	6
Gulf Coast	50	31,429	18	3
Southwest Texas	50	4,995	16	8
North Louisiana	19	6,520	5	3
Arkansas	2	0	2	0
Mississippi	10	0	2	8
Montana	6	3,936	1	1
Wyoming	2	0	2	0
Colorado	5	0	5	0
New Mexico	7	8,565	3	1
Total January	928	169,689	177	124
Total December	1,068	169,351	204	129
Difference	140	298	27	5

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Eastern	47	157	204
Central Ohio	23	76	99
Lima	2	17	19
Indiana	4	58	62
Michigan	59	82	141
Kentucky	7	70	77
Missouri	0	1	1
Tennessee	0	14	14
Illinois	1	18	19
Kansas	30	130	160
Oklahoma	58	250	308
North Central Texas	47	121	168
E. Cent. and E. Texas	273	270	543
East Texas gas field	5	30	35
West Texas	8	83	91
Panhandle Texas	16	29	45
Gulf Coast	10	66	76
Southwest Texas	22	93	115
North Louisiana	12	53	65
Arkansas	8	27	35
Mississippi	13	10	23
Alabama	2	3	5
Montana	13	48	61
Wyoming	12	66	78
Colorado	12	71	83
New Mexico	6	47	53
Utah	1	19	20
Total January	691	1,909	2,600
Total December	656	1,981	2,636
Difference	36	72	36

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

County—	Comp.	Prod.	Dry	Gas
Bryan	1	0	1	0
Carter	2	1,022	1	0
Coal	1	0	1	0
Creek	18	620	8	3
Haskell	1	0	1	0
Hughes	1	0	0	1
LeFlore	1	0	1	0
Love	1	0	1	0
McIntosh	1	0	1	0
Murray	1	0	1	0
Muskogee	6	90	3	1
Okfuskee	2	15	0	1
Oklahoma	9	48,761	0	0
Okmulgee	3	0	0	3
Pawnee	4	80	2	1
Pontotoc	2	165	1	0
Seminole	2	5,627	0	0
Stephens	1	42	0	0
Tulsa	1	35	0	0
Wagoner	5	40	3	1
Total January	63	56,497	25	11
Total December	54	64,962	16	13
Difference	9	8,465	9	2

Summary of Rigs and Wells Drilling

County—	Rigs	Dig.	Ttl.
Alfalfa	0	2	2
Atoka	1	1	2
Beckham	1	4	5
Blaine	0	1	1
Bryan	0	1	1
Caddo	0	4	4
Canadian	0	1	1
Carter	3	2	5
Coal	0	2	2
Cherokee	0	1	1
Cleveland	1	0	1
Comanche	0	3	3
Creek	6	33	39
Garfield	2	2	4
Garvin	0	1	1
Greer	0	2	2
Grady	1	0	1
Grant	1	1	2
Hughes	0	4	4
Haskell	0	2	2
Jefferson	0	2	2
Kay	0	5	5
Kiowa	0	1	1
Latimer	0	3	3
Lincoln	1	4	5
Logan	0	3	3
Love	0	2	2
McIntosh	0	1	1
Marshall	0	4	4
Muskogee	4	13	17
Noble	1	8	9
Okfuskee	3	5	8
Oklahoma	15	48	63
Okmulgee	3	8	11
Osage	3	5	8
Pawnee	0	10	10
Payne	0	2	2
Pittsburg	0	5	5
Pontotoc	3	3	6
Pottawatomie	2	4	6
Roger Mills	0	2	2
Seminole	1	15	16
Stephens	2	9	11
Texas	0	1	1
Tulsa	2	9	11
Washita	1	2	3
Wagoner	1	9	10
Total January	58	250	308
Total December	60	247	307
Difference	2	3	1

WELLS COMPLETED

BRYAN COUNTY

29-6s-7 Farris, M. A. Neff et al 2..... dry

Wells completed 1
Dry 1

CARTER COUNTY

19-1s-2w Taylor, Carter Oil Co. 2.....1022
28-2s-2w Lyles, Don Phillips et al 1... dry

Wells completed 2
Production 1022
Dry 1

COAL COUNTY

35-1-8 Shiring, W. E. McCraw 1..... dry

Wells completed 1
Dry 1

CREEK COUNTY

13-19- 8 Strip, Kirchner et al 1 50
31-19- 9 Gage, Elson et al 1-A 40
22-15- 8 Wayman "B," F. R. Billingslea and Riverland Oil Co. 2. 170
20-19- 9 Hollingsworth, Gled Oil Co. 2 . 125
34-17- 7 M. Boone, Magnolia Pet. Co. 5 dry
19-17-11 Maloney, J. H. Wright est. 1-A dry
9-16-11 Jones, The Texas Co. 2 ..... dry
3-16-12 Whetstone "C," S. W. Anthony 1-A ..... dry
25-19- 8 Reabe, Gled Oil Co. 2 ..... gas
3-19- 9 Coonrod, C. O. Buckles et al 2 dry
28-19- 9 Boyd, Bryan Pet. Co. 1..... 35
3-17-10 Miller, Jake Glen et al 1-A.... dry
32-17-11 Fulsom, Bryan Pet. Co. and Okla. Natural Gas Corp. 1 .. gas
13-19- 8 Weaver, The Texas Co. 8 150
15-19- 9 Foster, Pioneer Pet. Corp. 2 .. dry
29-19- 9 Hamilton, Gled Oil Co. 2 50
32-17-11 S. Fulsom, J. R. Allen et al 1. gas
3-16-12 Whetstone, S. W. Anthony 2-A dry

Wells completed 18
Production 620
Dry 8
Gas 2
Gas production 2,419,000

HASKELL COUNTY

14-9-19 Harrison, A. W. Ault 1 ..... dry

Wells completed 1
Dry 1

HUGHES COUNTY

5-8-9 McNevins, Gypsy Oil Co. 2 ..... gas

Wells completed 1
Gas 1
Gas production 9,000,000

LEFLORE COUNTY

30-6-26 Bryson, Sooner O. & G. Co. 1.. dry

Wells completed 1
Dry 1

LOVE COUNTY

14-8s-2w Sheldon, Chas. Van Vleck et al 1 ..... dry

Wells completed 1
Dry 1

McINTOSH COUNTY

10-12-15 Bray, Handfield P. & R. Co. 2 dry

Wells completed 1
Dry 1

MURRAY COUNTY

6-1-2 Cutchall, Capital P. & R. Co. 1 .. dry

Wells completed 1
Dry 1

MUSKOGEE COUNTY

34-16-15 Peterson, Mack Drlg. Co. 4 .. 50
4-15-18 Spaulding, J. V. Dunbar et al 1-A 40
18-15-18 Field, T. E. Wheeler et al 1-A dry
15-15-15 F. Tucker, Taylor & Geiger 1. gas
26-14-17 I. Lyons, Newokla Oil Co. 1.. dry
35-16-16 L. Grayson, R. B. Hash et al 2 dry

Wells completed 6
Production 90
Dry 3
Gas 1
Gas production 900,000

OKFUSKEE COUNTY

2-10-11 P. Johnson, W. A. Fleming et al 2 15
14-10-11 Stevenson, Wells et al 1 ..... gas

Wells completed 2
Production 15
Gas 1
Gas production 10,000,000

OKLAHOMA COUNTY

3-11-3w Buxton, Marshall and H. F. Wilcox O. & G. Co. 1.. †22,315
15-11-3w Shields, Continental Oil Co. et al 1 ..... †4,509
23-11-3w Egermier, Phillips Pet. Co. and Shell Pet. Corp. 2 .. *1,054
3-11-3w White, Government Pet. 1. Central, T. B. Slick est. 1.. ‡7,117 478
10-11-3w Black, Continental Oil Co. et al 1 ..... §5,339
35-12-3w Brittain, Phillips Pet. Co. 1 §468
3-11-3w Classen-Edwards, T. B. Slick est. 7 ..... §3,932
15-11-3w Long, T. B. Slick est. 2 .. §3,549

Wells completed 9
Production 48,761

*Five hours and 50 minutes. †Five hours and 45 minutes. ‡Seven hours. §Four hours.

OKMULGEE COUNTY

32-15-13 Wood, D. M. Logan 1 ..... gas
29-12-14 J. Shepard, Penrod & Thompson 4 ..... gas
26-12-12 Hope, Clark et al 1-A ..... gas

Wells completed 3
Gas 3
Gas production 10,000,000

PAWNEE COUNTY

30-20-10 Duck, Gus Beagle 1 ..... gas
5-20- 8 Walls, Katherine Oil Co. 2 .. dry
35-20- 9 Baker, H. D. Hambley et al 1-A 50
32-20- 9 Redmond, Swift et al 1 ..... dry

Wells completed 4
Production 80
Dry 2
Gas 1
Gas production 184,000

PONTOTOC COUNTY

27-5-6 Hart, Barnsdall Oil Co. et al 1.. 165
32-5-5 Burk, Benedum & Trees 1 ..... dry

Wells completed 2
Production 165
Dry 1

SEMINOLE COUNTY

30-7-8 F. Fish, Jarvis & Holm 1 4453
19-7-8 D. Fish, Empire O. & R. Co. et al 2 1174

Wells completed 2
Production 5627

STEPHENS COUNTY

2-2s-3w Dare, P. L. Gilbert et al 1 ... 42

Wells completed 1
Production 42

TULSA COUNTY

27-17-13 Bunger, J. E. Martin and Cummings 3 35

Wells completed 1
Production 35

WAGONER COUNTY

7-15- 7 W. Porter, D. Clawson 1 .... dry
32-18-17 M. Andy, Braman Oil Co. 1 .. gas
30-18-15 Drew, C. A. Mechlin et al 5 .. dry
26-18-15 Drew, J. E. Martin et al 2 .. 40
29-16-19 Brewer, J. P. Flanagan 1 ... dry

Wells completed 5
Production 40
Dry 3
Gas 1
Gas production 500,000

EAST TEXAS FIELDS

County—	Comp.	Prod.	Abd	Gas	Rig	Dlg.	Ttl.
Anderson	0	0	0	0	0	1	1
Cherokee	0	0	0	0	2	2	4
Dallas	0	0	0	0	1	2	3
Ellis	0	0	0	0	0	3	3
Fannin	2	0	2	0	0	0	0
Franklin	0	0	0	0	1	0	1
Gregg	180	16,646	1	0	168	105	273
Henderson	0	0	0	0	0	2	2
Hill	0	0	0	0	0	1	1
Hopkins	0	0	0	0	0	3	3
Hunt	0	0	0	0	1	1	2
Kaufman	0	0	0	0	1	1	2
Lamar	1	0	1	0	0	2	2
Leon	0	0	0	0	1	3	4
Nacogdoches	0	0	0	0	1	8	9
Polk	0	0	0	0	0	3	3
Rains	0	0	0	0	0	1	1
Red River	0	0	0	0	1	6	7
Robertson	0	0	0	0	0	2	2
Rockwall	0	0	0	0	0	1	1
Rusk	108	16,197	4	0	70	89	159
San Augustine	0	0	0	0	1	1	2
Smith	16	1,487	1	0	3	5	8
Titus	1	0	1	0	0	2	2
Upshur	28	1,964	1	0	20	11	31
Van Zandt	2	260	0	0	0	14	14
Wood	0	0	0	0	2	1	3
Total Jan.	338	36,554	11	0	273	270	543
Total Dec.	465	50,131	8	0	240	297	537
Difference	127	13,577	3	0	33	27	6

Note—Initial production based on gauges ranging from a few minutes up to 24 hours, but mostly one hour through various chokes.

WELLS COMPLETED

FANNIN COUNTY

Lucas Development Co.'s No. 1 Ray Peeler ..... abd
Ed. Parsons' No. 1 Mrs. H. E. Morgan.. abd

GREGG COUNTY

E. J. Adams et al's No. 1 School Lot through ¾-in. tubing choke (3 hrs.) 90
Amerada Pet. Corp.'s No. 2 Killingsworth through 1-in. tubing choke (⅛ hr.).. 95
Amerada Pet. Corp.'s No. 3 Tooke through open tubing (⅛ hr.) 70
Amerada Pet. Corp.'s No. 4 Tuttle through 1-in. tubing choke (⅛ hr.) 80
Arkansas Fuel Oil Co.'s No. 4 Adrian-McCary through open tubing (⅛ hr.) 100
Arkansas Fuel Oil Co.'s No. 4 Heaton through open tubing (⅛ hr.) 54
Atlantic and Wadley's No. 2 T. W. Lee through tapered tubing 40
Ausley & Massingill's No. 2 A. Harris through various chokes 97
Barnsdall and Sun Oil Co.'s No. 2 Bingham through 1-in. tubing choke (½ hr.) 73
Cox & Hammon's No. 3 Lacy through 1-in. tubing choke 120
Duke & Mitchell through various chokes 100
East Texas Ref. Co.'s No. 1 W. M. Fuller by heads per day 60
Empire Gas & Fuel Oil Co.'s No. 1 J. C. Bumpass through open tubing (¼ hr.) 60
F.H.E. Oil Co.'s No. 1 R. Christian through 1-in. tubing choke (⅛ hr.)... 60
Gulf Prod. Co.'s No. 3 J. C. Judge through ¾-in. tubing choke 125
J. O. Hodges et al's No. 1 G. W. Ritchie through open tubing 66
D. F. Hughes' No. 1 S. G. Smith, no gauge, swabbing ....
Jim McMurrary's No. 2 Snoddy through 1-in. tubing choke 112
Magnolia Pet. Co.'s No. 1 Jim Allen through ¾-in. tubing choke 132
Magnolia Pet. Co.'s No. 14 J. W. Free through ¾-in. tubing choke 120
H. D. Morton's No. 1 Tom Hensley through various chokes 87
Navarro Oil Co.'s No. 1 E. L. Walker through ½-in. tubing choke (⅛ hr.).. 65
B. A. Skipper's No. 1 D. C. Castleberry through 1-in. tubing choke (⅛ hr.).. 72
Superior Oil Co.'s No. 5 Ingram through 1-in. tubing choke 135
Western State Oil & Royalty Co.'s No. 2 Bauknight through open tubing (½ hr.) 45
Yount Lee Oil Co.'s No. 2 Floyd Jones through 11/16-in. tubing choke 102
Gulf Prod. Co.'s No. 5 Willie Holt through ¾-in. tubing choke 100
Gulf Prod. Co.'s No. 7 Ben Watson, no gauge ....
Magnolia Pet. Co.'s No. 2 A. Hicks through 1-in. tubing choke 107
Magnolia Pet. Co.'s No. 3 A. Hicks through ¾-in. tubing choke 132
Magnolia Pet. Co.'s No. 2 N. Radford through ¾-in. tubing choke 155
Wright-Smith Oil Co.'s No. 1 Harris through open tubing and casing 100
Cloptin & Lewis' No. 1 Southworth through 1-in. tubing choke 100
Adams & Lytle's No. 3 T. Anderson through various chokes 100
Arkansas Fuel Oil Co.'s No. 2 Castleberry .....temp. abd
Arkansas Fuel Oil Co.'s No. 3 Rembert through open tubing (½ hr.) 86
Arkansas Fuel Oil Co.'s No. 1-A Smith through open tubing (½ hr.) 122
Atlantic Oil & Prod. Co.'s No. 2-B W. T. Burnside through tapered tubing 61
Atlantic Oil & Prod. Co.'s No. 3 Fisher through tapered tubing 65
Bond & Johnson's No. 2 J. R. Fenton through various chokes (2 hrs.) 100
S. P. Branson's No. 1 J. J. Fuller through various chokes (2 hrs.) 110
R. P. Bates' No. 1 Sam Kay through open tubing 190
C. P. Carr et al's No. 1 G. W. Ritchie through open tubing 60
Champlin & Bass' No. 1 A. L. Rogers through open tubing (⅛ hr.) 100
Coastal Drilling Co.'s No. 1 Alexandria, through open tubing (¼ hr.) 42
Cox and Hammon's No. 7 L. A. Rodden through various chokes (24 hrs.) 100
Cox & Hammons' No. 9 Rodden through various chokes (24 hrs.) 100
Danciger Oil & Ref. Co.'s No. 3 C. C. Clemons, open tubing (10 min.) 38
Dych Oil Co.'s No. 2 J. M. Christian through 1-in. tubing choke 125
F.H.E. Oil Co.'s No. 5 B. C. Christian through 1-in. tubing choke 110
Gregg Oil Co.'s No. 1-D T.&P.R.R. through 1-in. tubing choke 100
G. A. Guiberson's No. 1 J. T. Hopkins through open tubing 130
Humble Oil & Ref. Co.'s No. 4 T. B. Harris through 1-in. tubing choke ... 131
Humble Oil & Ref. Co.'s No. 2 J. M. McFarland through 1-in. tubing choke.. 108
Magnolia Pet. Co.'s No. 3 H. Key through ¾-in. tubing choke 156
E. J. Moran's No. 1 C. J. Dollahite through various chokes per day 100
Payton et al's No. 1 J. M. Christian through various chokes 140
Prairie Oil & Gas Co.'s No. 2 Aiken through ¾-in. tubing choke 137
Red Star Oil Co.'s No. 1 N. Christian through open tubing 110
Sabinos Oil Corp.'s No. 7-C T. M. Collins through pinched tubing 100
Selby Oil & Gas Co.'s No. 2 A. Miller, by heads, per day 200
Shell Pet. Corp.'s No. 2 McSalter through open tubing (¼ hr.) 41
Sinclair Oil & Gas Co.'s No. 5 J. R. Williams through open tubing (⅛ hr.).. 100
Sun Oil Co.'s No. 1 W. L. Fuller through 2-in. flow line 37
Sun Oil Co.'s No. 1 J. A. Grey through 2-in. flow line 50
Sun Oil Co.'s No. 2-A A. Tooke through 2-in. flow line 80
Superior Oil Co.'s No. 6 L. C. Ingram through 1-in. tubing choke (⅛ hr.)... 110
The Texas Company's No. 2 J. Waddell through ¾-in. tubing choke 82
Tidal Oil Co.'s No. 4 A. Sheppard through open tubing (10 min.) 42
Magnolia Pet. Co.'s No. 1 T. B. Stinchomb through open tubing 230
Angle-McDonald and Campbell's No. 1 Ector through pinched tubing, per day 100

Fox-Wood's No. 1 Mrs. E. L. Walker through 1-in. tubing choke (45 min.) 100
Yount Lee Oil Co.'s No. 1-B E. N. Watley through 11/16-in. tubing choke.... 67
L. Glasscock's No. 1 Goforth through open tubing 200
Bill Brown's No. 1 Will Chesebrough pinched through tubing, per day 100
Sam P. Sheiburne's No. 1 Crim Mercantile through ¼-in. tubing choke 80
W. C. Turnbow's No. 1 Elder through ¾-in. tubing choke 75
F. Gowman's No. 1-A Spear through ¾-in. tubing choke (45 min.) 25
Gulf Prod. Co.'s No. 4 Mary Charles through ¾-in. tubing choke 87
Gulf Prod. Co.'s No. 1 J. S. Elder through ¾-in. tubing choke 100
Gulf Prod. Co.'s No. 10 Spear through ¾-in. tubing choke 115
Houston Oil Co.'s No. 2 Spear through ¾-in. tubing choke 87
Humphries' No. 2 Spear pinched through tubing, per day 100
Jones & O'Brien's No. 2 Lloyd through 1-in. tubing choke 175
McBride & Robinson's No. 1 Elder, 1-in. tubing choke (⅛ hr.) 44
Magnolia Pet. Co.'s No. 2 O. Hilburn through 4-in. line on casing (½ hr.) 94
H. K. Spear's No. 1 C. Alexander, per day 30
Mazda Oil Co.'s No. 1 Levi Butts through ¼-in. tubing choke (6½ hrs.) 70
McCulloch's No. 1 J. A. Knowles through ¾-in. tubing choke (½ hr.) 40
Sells Pet. Corp.'s No. 1 Siebly, per day. 100
Shell Pet. Corp.'s No. 5-A J. Douglass through 2-in. tubing choke (½ hr.).. 50
Shell Pet. Corp.'s No. 4 S. W. Willoughby, through 2-in. tubing choke (½ hr.) 58
Sinclair Oil & Gas Co.'s No. 1 J. E. Lawther, swabbing (8 hrs.) 43
Shelly et al's No. 2 L&G.N.R.R. through 2-in. tubing choke (⅛ hr.) 38
Tidal Oil Co.'s No. 1 W. D. Lacy through tubing and casing 270
Whittle & Cavanaugh's No. 1 Rosa Brown through tubing, per day 100
F. W. Abshire's No. 1 W. H. York through open tubing (½ hr.) 34
Alco Royalty Co.'s No. 2 A. H. King through open tubing (10 min.) 105
Amerada Pet. Co.'s No. 4 Bumpass through 1-in. tubing choke (⅛ hr.).. 85
Amerada Pet. Corp.'s No. 3 McPherson through 1-in. tubing choke (⅛ hr.).. 72
Arkansas Fuel Oil Co.'s No. 3-C Lathrop (⅛ hr.) 69
Atlantic and Wadley's No. 1 H. L. Foster through 1-in. tubing choke 56
Cox & Hamon's No. 4 Fee through tubing (½ hr.) 86
Empire Gas & Fuel Oil Co.'s No. 4 J. W. Akin through open tubing (¼ hr.) .. 37
Forlyn Oil Co.'s No. 1 G. Rodden through ¾-in. tubing choke (¼ hr.). 16
Glasscock Bros.' No. 1 Church through 1-in. tubing choke (10 min.) 35
Gulf Prod. Co.'s No. 1 M. F. Barker through ¾-in. tubing choke 93
D. L. Hoffman's No. 1 Bumpass through tubing (½ hr.) 100
Humble Oil & Ref. Co.'s No. 6 A. Carter through ¾-in. tubing choke 105
Humble Oil & Ref. Co.'s No. 5 Lawrence through 1-in. tubing choke 150
Iowa-Payne's No. 2 W. H. York through ¾-in. tubing choke 108
Lechner & Hubbard's No. 1 J. N. Tuttle through open tubing 250
Magnolia Pet. Co.'s No. 3 M. D. Dyner through ¾-in. tubing choke 130
Magnolia Pet. Co.'s No. 6 White through open tubing 188
J. H. Massey et al's No. 3 M. Fenn through ¾-in. tubing choke 30
Powell & Irion's No. 1 O. A. Talley through ¾-in. tubing choke 134
Satellite Oil Co.'s No. 3 L. M. Colburn through ¾-in. tubing choke (½ hr.).. 25
Sell Pet. Co.'s No. 2 R. Fisher through 1-in. tubing choke 120
C. S. Smith's No. 1 George Jones through ¾-in. tubing choke 95
C. R. Starnes' No. 1 G. S. Dunway through ¾-in. tubing choke 100
Stroube & Stroube's No. 1 John Bumpass through ¾-in. tubing choke 98
Superior Oil Co.'s No. 7 L. C. Ingram through open tubing (½ hr.) 48
Sutton & Hawkins' No. 4 Whittaker through ¾-in. tubing choke 100
W. J. Collins' No. 1 H. T. Elder through various chokes, per day 70
D.D.D. Oil Co.'s No. 1 E. S. Hagler through various chokes, per day 100
Magnolia Pet. Co.'s No. 8 L. H. Griffin through 4-in. line first 5 minutes 48
Magnolia Pet. Co.'s No. 1 John Redford through ¾-in. tubing choke 128
Paul L. Meller's No. 1 Crim through 1-in. tubing choke 60
May Claire O'Connell's No. 1 Bean-Willoughby through ¾-in. tubing choke.. 100
Oriental Oil Co.'s No. 2 Alexander through pinched tubing, per day 100
Pelican Natural Gas Co.'s No. 3 Spear & Laird through ¾-in. tubing choke (10 min.) 21
Dearing & Wallace's No. 1 Fee through open tubing 100
Wells & Gann's No. 1 Charles through open 2-in. tubing choke 90
Arkansas Fuel Oil Co.'s No. 5 Adrian-McCary through ¾-in. tubing choke.. 86
Arkansas Fuel Oil Co.'s No. 2 M. Christian through 1-in. tubing choke (⅛ hr.) 100
Arkansas Fuel Oil Co.'s No. 1 T. Snoddy through 1-in. tubing choke (⅛ hr.)... 100
Barnsdall Oil Co.'s No. 3 R. E. L. Ferguson through 1-in. tubing choke 100
Barnsdall Oil Co.'s No. 4 G. W. Bingham through 1-in. tubing choke (⅛ hr.).. 72
J. B. Bond et al's No. 1 R. Johnson through ¾-in. tubing choke 100
Darby Pet. Co.'s No. 1 C. C. Clemons through 1-in. tubing choke 100
Deep Rock Oil Co.'s No. 2 Tooke through ¾-in. tubing choke 129
Dillard Pet. Co.'s No. 4 W. R. Jones through ¾-in. tubing choke (⅛ hr.). 60
F.H.E. Oil Co.'s No. 6 B. C. Christian through ¾-in. tubing choke 100
Gilcrease Oil Co.'s No. 2 A. Christian through ¾-in. tubing choke (40 min.) 35
Gulf Prod. Co.'s No. 1 Ross Young through ¾-in. tubing choke 70
Howard Pet. Co.'s No. 2 Arch Davis through 1½-in. tubing choke (⅛ hr.) 38
Humble Oil & Ref. Co.'s No. 5 A. L. Hughes through ¾-in. tubing choke.. 80
Humble Oil & Ref. Co.'s No. 3 W. R. Hughes through 1-in. tubing choke... 33
Humble Oil & Ref. Co.'s No. 1 H. M. Lawrence through ¾-in. tubing choke 47
B. K. Isaacs' No. 1 J. A. Tuttle through 11/16-in. tubing choke (¼ hr.) 31
Magnolia Pet. Co.'s No. 10 Everett through 1-in. tubing 270
Magnolia Pet. Co.'s No. 3 T. B. Stinchomb through open tubing 222
Morgan & McMinn's No. 1 H. L. Foster through 1-in. tubing choke 240
Prairie Oil & Gas Co.'s No. 3 W. H. York through 1-in. tubing choke 120
Red Star Oil Co.'s No. 2 R. Christian through 1-in. tubing choke 160
Red Star Oil Co.'s No. 2 M. Lemaire through 1-in. tubing choke 66
Shell Pet. Corp.'s No. 2 J. W. Aiken through 1-in. tubing choke (⅛ hr.).. 64
Shell Pet. Corp.'s No. 2 A. W. King through open tubing (⅛ hr.) 60
Simms and Stanolind Oil & Gas Co.'s No. 2 J. B. Tenery through 1-in. tubing choke 145
Simms Oil Co.'s No. 1 Bob Wood through open tubing 130
Sun Oil Co.'s No. 4 J. McKinley through open tubing 85
Superior Oil Co.'s No. 8 L. C. Ingram through 1-in. tubing choke (¼ hr.)... 45
L. H. Wentz Oil Co.'s No. 2 G. W. Ritchy through 1-in. tubing choke (¼ hr.).. 15
Yount Lee Oil Co.'s No. 4-A Fenton through 1-in. tubing choke 81
Yount Lee Oil Co.'s No. 2 Tuttle through open tubing (⅛ hr.) 32
Gulf Prod. Co.'s No. 2 Calvin Brown through ¾-in. tubing choke 120
Gulf Prod. Co.'s No. 4 Culver through ¾-in. tubing choke 112
J. H. Turner and Gandy's No. 1 I. Benson through various chokes, per day 100
N. V. Kinsey's No. 1 Ben Laird, through various chokes, per day 100
Magnolia Pet. Co.'s No. 2 J. Redford through ¾-in. tubing choke 140
Louisiana Oil & Ref. Co.'s No. 1 W. C. Griffin through 2½-in. tubing choke (⅛ hr.) 85
Navarro Oil Co.'s No. 1 Green through open tubing 175
Shell Pet. Corp.'s No. 4 J. S. King through tapered tubing (½ hr.) 18
Shell Pet. Corp.'s No. 14 J. B. Watson through open tubing (½ hr.) 10
Steen Drlg. Co.'s No. 3 W. D. Lacy through 1-in. tubing choke 128
Sun Oil Co.'s No. 3 Cole through ¾-in. tubing choke 83
The Texas Company's No. 4 J. M. Dickson through ¾-in. tubing choke 96
Tidal Oil Co.'s No. 3 E. R. D. Bivens through open tubing (5 min.) 31
W. C. Turnbow's No. 2 H. T. Elder & Sons through open tubing (55 min.).. 185
Wheelock & Collins' No. 1 Clayton heirs through open tubing 125

Initial production 16,646
Number of completions 180
Abandoned 1

LAMAR COUNTY

Doyle & Jondear's No. 1 J. Horn..... abd

RUSK COUNTY

Charles Carroll and Taylor's No. 1 J. C. Gipson 225
Gulf Prod. Co.'s No. 3-B C. E. Christian through ¾-in. tubing choke 104
Gulf Prod. Co.'s No. 8-C Christian through ¾-in. tubing choke 115
Everts Drlg. Co.'s No. 1 P. C. Warren through ¾-in. tubing choke 100
Navarro Oil Co.'s No. 6 Brightwell through 1¼-in. tubing choke 100
Sun Oil Co.'s No. 9 L. R. Beall through open tubing 117
Weaver-Crim Oil Co.'s No. 1 Bean, per day 100
P. M. Bilydeson's No. 2 J. W. Wheelis, per day 24
Coastal Drlg. Co.'s No. 1 Giles 95
Droopleman Development Co.'s No. 3 F. J. Cox through 2-in. tubing choke.... 77
Dunlan & Holt's No. 1 R. A. Motley through ¾-in. tubing choke (½ hr.). 40
Golding & Murchison's No. 3 Young through 1-in. tubing choke 110
Gulf Prod. Co.'s No. 5-A W. P. Keeling through 2½-in. tubing choke 125
Humble Oil & Ref. Co.'s No. 18 Kangerga through ¾-in. tubing choke 100
Humble Oil & Ref. Co.'s No. 1 G. Wilson through ¾-in. tubing choke 25
H. L. Hunt's No. 2 A. P. Finney through open tubing 80
H. L. Hunt's No. 1-C Joe Lee through open tubing 160
Imperator Oil Co.'s No. 1 Alford through ¼-in. tubing choke 125
Lion Oil & Ref. Co.'s No. 5-A Brooks through open tubing 70
L. McMurray's No. 1 A. Blackwell through open tubing (½ hr.) 70
Mid-Kansas Oil & Gas Co.'s No. 5 M. M. Cross through open tubing 260
Smith & Torrans' No. 2 Torrans through ¾-in. tubing choke (½ hr.) 45
Sunbeam Oil Co.'s No. 1 W. W. Bradon through 1½-in. tubing choke (½ hr.) 80
Sun Oil Co.'s No. 6 O. W. Knight through open tubing 90
Tex-Jersey Oil Co.'s No. 1-B W. P. Keeling through ¾-in. tubing choke 100
Tidal Oil Co.'s No. 2-A H. M. Hale through 2½-in. tubing choke 57
Grady Vaughn's No. 3 Alford through ¾-in. tubing choke 85
Ward Oil Co.'s No. 8 E. S. Thrash through open tubing (½ hr.) 95
Woodley Pet. Co.'s No. 4 McMillan through open tubing 75
Chapman's No. 1 W. M. Futch through ¾-in. tubing choke 70
Cordova Union Oil & Gas Co.'s No. 6 Bean 90
Darby Oil Co.'s No. 3 C. O. Christian, per day 100
Devonian Oil Co.'s No. 8 Motley through ¾-in. tubing choke 105
Empire Gas & Fuel Oil Co.'s No. 4 Leverett through 1-in. tubing choke 125
Gulf Prod. Co.'s No. 5 Florence through ¾-in. tubing choke 95
Guthrie's No. 1 Morris ..... abd
Hasting & Dobson's No. 1 J. Dixon, per day, pinched through tubing 100
Humble Oil & Ref. Co.'s No. 1 J. T. Robinson through ¾-in. tubing choke (⅛ hr.) 46
Magnolia Pet. Co.'s No. 2 S. E. Brox through 4-in. line on casing and ¾-in. tubing choke (½ hr.) 95
Danciger Oil & Ref. Co.'s No. 1 Leverett Chapel, through open tubing (6 min.) 84
Stanolind Oil & Gas Co.'s No. 4 King through open tubing 141
Wheelock & Collins' No. 6 Dick Wells, per day 100
Arrow Ref. Co.'s No. 1-A C. Young through open tubing (½ hr.) 85
E. L. Chapman's No. 1 A. Johnson through open tubing (½ hr.) 100
Coombs' No. 4 Stone through open tubing (½ hr.) 65
Golding & Murchison's No. 6 Fair through 1-in. tubing 63
Goodgame & Eby's No. 1 W. W. Holland, per day 100
Grayburg et al's No. 3 Kangerga through ¾-in. tubing choke 93
Humble Oil & Ref. Co.'s No. 1 Glover through ¾-in. tubing choke (⅛ hr.). 50
Humble Oil & Ref. Co.'s No. 8 J. H. Wooley through ¾-in. tubing choke.. 82
M. H. and R. J. McMurrary's No. 3 Blackwell through open tubing (⅛ hr.) 70
Magnolia Pet. Co.'s No. 5 Dan Kelley through ¾-in. tubing choke 95
Mallerne and Aston Oil Co.'s No. 1 E. B. Alford through open tubing 180
Merry Bros. and Perini's No. 1 J. M. Price through open tubing (⅛ hr.).. 40
Mid-Kansas Oil & Gas Co.'s No. 3 Graham through open tubing 220
Nash & Windfohr's No. 2 H. L. Griffin through open tubing 90
Sinclair Oil & Gas Co.'s No. 20 Kinney through open tubing (½ hr.) 45
The Texas Company's No. 4 Jarvis through ¾-in. tubing choke 110
Tidal Oil Co.'s No. 4 Irion through ¾-in. tubing choke 63
Nat Wiseman's No. 1 Gabe McElroy through 1-in. tubing choke 60
Jackson-Wise and Markham's No. 2 C. O. Christian through open tubing ... 85
Magnolia Pet. Co.'s No. 2 Jernigan through 4-in. line on casing and 1-in. tubing, first 5 minutes 53
Shell Pet. Corp.'s No. 5 J. H. Spivey through open tubing (½ hr.) 87
Weaver-Crim's No. 1 J. N. Peterson pinched through tubing, per day ... 100
Arkansas Fuel Oil Co.'s No. 5 Beall through open tubing 140
Arkansas Fuel Oil Co.'s No. 5 Wheelis through open tubing 85
Blackwell Oil & Gas Co.'s No. 4 Stone through open tubing 150
F. C. Clark's No. 1 A. Johnson through 1-in. tubing choke (50 min.) 75
Devonian Oil Co.'s No. 5 Alford through ¾-in. tubing choke (½ hr.) 30
Deep Rock Oil Co.'s No. 4 Stovall through open tubing 85
Humble Oil & Ref. Co.'s No. 7 W. L. Price through ¾-in. tubing choke (½ hr.) 54
Humble Oil & Ref. Co.'s No. 1-B J. H. Selvey through ¾-in. tubing choke (½ hr.) 62
Mid-Kansas Oil & Gas Co.'s No. 1 H. L. Griffin through open tubing 15
Mid-Kansas Oil & Gas Co.'s No. 8 E. E. Moores through open tubing 160
Moss & Urschel's No. 2 Deason through pinched casing 80
O'Donnell et al's No. 1 London School through open tubing (½ hr.) 110
Pansey Oil Co.'s No. 1 F. J. Cox through open tubing 45
R.M.V. Oil Co.'s No. 1 L. J. Pinkston through open tubing 85
Standard Pipe & Supply Co.'s No. 2 W. P. Brett through 1-in. tubing choke.. 100
Stanolind Oil & Gas Co. and Pure Oil Co.'s No. 1 R. J. Burton through tubing 145
The Texas Company's No. 1 Allen Kersh through 2-in. tubing 60
Tidal Oil Co.'s No. 5 Pinkston through open tubing (24 hrs.) 6048
Ward Oil Co.'s No. 4 Giles through open tubing 60
A. J. Brown's No. 1 Strong ..... abd
C. L. Archer ..... abd
Devonian and Gulf Prod. Co.'s No. 11 R. A. Motley through ¾-in. tubing choke 90
Oliphant's No. 1 W. P. Moore through ¾-in. tubing choke 108
Empire Gas & Fuel Oil Co.'s No. 5 C. C. Christian through 2-in. tubing choke 70
Gulf Prod. Co.'s No. 4-B Christian through ¾-in. tubing choke 25
Gulf Prod. Co.'s No. 2 O. E. Harris.... abd
Humble Oil & Ref. Co.'s No. 1 Ben Peterson through ¾-in. tubing choke 83
Houston Oil Co.'s No. 3 S. S. Laird through ¾-in. tubing choke 80
Lewis Prod. Co.'s No. 1 W. D. Peterson pinched, per day 100
Shell Pet. Corp.'s No. 6 W. P. Moore through open tubing (½ hr.) 19
Ward Oil Co.'s No. 3 Beall through various chokes, per day 100
Arrow Oil & Ref. Co.'s No. 1 L. B. Rollins through open tubing 32
Gulf Prod. Co.'s No. 1-A H. H. Rayford through ¾-in. tubing choke 70
Humble Oil & Ref. Co.'s No. 1 J. E. Arnold through ¾-in. tubing 72
Humble Oil & Ref. Co.'s No. 10 Mullikin through ¾-in. tubing choke (½ hr.). 33
Humble Oil & Ref. Co.'s No. 5-A J. H. Silvey through ¾-in. tubing choke (½ hr.) 62
Mid-Kansas Oil & Gas Co.'s No. 3 R. G. Mason through open tubing 120
Mid-Kansas Oil & Gas Co.'s No. 1 J. M. Price through open tubing 120
Arch Page's No. 1 Florey through 1-in. tubing choke (20 min.) 20
Stanolind Oil & Gas Co.'s No. 1 T. O. Mason through open tubing 108
The Texas Company's No. 1 J. M. Price through ¾-in. tubing choke 110
Texas Trad. Co. et al's No. 1 T. O. Mason through open tubing 120
Tidal Oil Co.'s No. 1 Otis Whittington through open tubing (10 min.), per day 1080
R. H. Vise's No. 1 Mrs. L. Morse through open tubing (½ hr.) 50

Initial production 16,197
Number of completions 108
Abandoned 4

SMITH COUNTY

Arcadia Ref. Co.'s No. 1 Wolford through open tubing 180
Sinclair Oil & Gas Co.'s No. 1 Bunch Wilson through open tubing (40 min.) 100
Sun Oil Co.'s No. 6 J. D. Hanson through open tubing 60
Sun Oil Co.'s No. 7 O. W. Knight through open tubing 90
Sun Oil Co.'s No. 3 J. A. Layne through open tubing 85
C. B. Bunte's No. 1 Patterson through open tubing (½ hr.) 20
Mid-Kansas Oil & Gas Co.'s No. 3 J. H. Sharp through open tubing 220
Taubert & McKee's No. 1 T. O. Wright through open tubing 135
Big Indian Oil Co.'s No. 4 Wolford through open tubing (12 min.) 42
Carter & Owen's No. 1 W. R. Wolford through open tubing (½ hr.) 80
Gant & Wegner's No. 1 Sebe Stone through open casing (20 min.) 96
Magnolia Pet. Co.'s No. 1 J. R. Wright through 2-in. tubing and casing (¼ hr.) 149
Sinclair Oil & Gas Co.'s No. 1 Amanda Wiley through open tubing, 36 per cent salt water 100
J. R. Meeker et al's No. 1 Lewis Bason abd
Gulf Prod. Co.'s No. 1 G. A. Turner through ¾-in. tubing 40
Hamilton et al's No. 4 L. A. Gambrell through open tubing (½ hr.) 90

Initial production 1487
Number of completions 16
Abandoned 1

TITUS COUNTY

J. P. Flannagan's No. 1 McGill ..... abd

UPSHUR COUNTY

Atlantic Oil & Prod. Co.'s No. 7 Moyers through open tubing 25
Cal-Pet Corp.'s No. 1 T. B. Stinchomb through ¾-in. tubing choke 85
Humble Oil & Ref. Co.'s No. 5 G. W. Johnson through open tubing 105
Humble Oil & Ref. Co.'s No. 1 D. C. Shelton (4 hrs.) 25
Magnolia Pet. Co.'s No. 7 Adkins through ¾-in. tubing choke 96
Shano Oil Co.'s No. 1 Doly Rodden through open tubing (½ hr.) 100
Simms-Stanolind Oil & Gas Co.'s No. 3-B J. J. Flewellen, per day 100
Humble Oil & Ref. Co.'s No. 7 W. W. Holland through ¾-in. tubing choke.. 85
Humble Oil & Ref. Co.'s No. 5 I. D. Smith through ¾-in. tubing choke... 80
Magnolia Pet. Co.'s No. 1 H. Fenton through ¾-in. tubing choke 85
Sabinas Oil Co.'s No. 2-C T. M. Collins through 1-in. tubing choke 120
Shasas Oil Co.'s No. 1 Hall ..... abd
Humble Oil & Ref. Co.'s No. 1-B O'Byrne through 1-in. tubing choke 42
Jay & Kay's No. 2 Victory through 1-in. tubing choke (20 min.) 20
Galvey Oil Co.'s No. 1 Moore heirs through ½-in. tubing choke (½ hr.). 31
Murray Tool & Supply Co.'s No. 1 A. J. Sanders through 1-in. tubing choke... 110
O. W. Production Co.'s No. 1-C O. F. Smith through open tubing 110
W. H. Peckham et al's No. 2 T. Wells through 1-in. tubing choke (¼ hr.).. 30
Conservative Oil Co.'s No. 1 J. N. Tuttle through ¾-in. tubing choke 85
Ellis & Dumas' No. 3 T. Wells through ¾-in. tubing choke 130
Humble Oil & Ref. Co.'s No. 3 H. M. Reeves through 1-in. tubing choke... 54
Magnolia Pet. Co.'s No. 2 H. Fenton through 1-in. tubing choke 100
W. H. Peckham et al's No. 1-B Free through 1-in. tubing choke (20 min.) 18
Sabinas Oil Corp.'s No. 5 C. T. Collins through ¼-in. tubing choke, per day 100
Sabinas Oil Corp.'s No. 8 C. T. Collins through 1-in. tubing choke 60
Shell Pet. Corp.'s No. 9 C. C. Landers through open tubing (⅛ hr.) 45
Sun Oil Co.'s No. 2 Hargrove through open tubing 60
J. A. Woods' No. 1 A. J. Sanders through ¾-in. tubing choke (⅛ hr.) 63

Initial production 1964
Number of completions 28
Abandoned 1

VAN ZANDT COUNTY

Pure Oil Co.'s No. 4 L. M. Brawner through 11/16-in. tubing choke (24 hrs.) 60
Pure Oil Co.'s No. 4 O. L. L. L. Swain through 11/16-in. tubing choke (24 hrs.) 200

Initial production 260
Number of completions 2

EAST TEXAS GAS FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Bowie	0	0	0	0	0	3	3
Camp	0	0	0	0	0	1	1
Cass	2	0	2	0	1	6	7
Harrison	1	0	0	1	1	1	2
Marion	0	0	0	0	0	1	1
Panola	0	0	0	0	3	5	8
Red River	0	0	0	0	0	2	2
Shelby	0	0	0	0	0	11	11
Total Jan.	3	0	2	1	5	30	35
Total Dec.	2	0	1	1	4	33	37
Difference	1	0	1	0	1	3	2

*Gas production: Harrison, 4,000,000 feet.

WELLS COMPLETED

CASS COUNTY

L. Strong Survey, Whittington, Everts Drilling Co. 1 ..... dry
H. Buckler Survey, Hall, George McKamie 1 ..... dry

HARRISON COUNTY

John Womack Survey, Agurs, Calatex Oil & Gas Co. 4 ..... gas

Gas production 4,000,000

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	2	50	0	1
Chase	1	0	1	0
Cowley	9	2,175	3	0
Ellsworth	2	1,524	0	0
Greenwood	4	600	3	0
McPherson	9	3,359	2	2
Rice	2	1,430	0	0
Russell	1	185	0	0
Rush	1	0	0	1
Sedgwick	10	4,657	1	0
Sumner	1	0	1	0
Total January	42	13,980	11	4
Total December	28	10,120	5	3
Difference	14	3,860	6	1

Summary of Rigs and Wells Drilling

County—	Rigs	Drig.	Ttl.
Barber	0	1	1
Barton	0	4	4
Bourbon	0	1	1
Butler	1	3	4
Chase	1	0	1
Clark	0	1	1
Coffey	0	2	2
Cowley	5	14	19
Dickinson	0	1	1
Ellis	0	1	1
Ellsworth	1	6	7
Finney	0	1	1
Ford	0	2	2
Greenwood	4	11	15
Graham	0	1	1
Harvey	0	3	3
Jefferson	0	1	1
Kingman	0	2	2
Marshall	0	1	1
McPherson	9	33	42
Marion	0	2	2
Morris	2	4	6
Morton	0	1	1
Osage	0	1	1
Rawlins	0	1	1
Reno	1	1	2
Rice	2	4	6
Rush	1	1	2
Russell	2	3	5
Saline	0	1	1
Sedgwick	0	13	13
Sheridan	0	1	1
Stafford	1	2	3
Stevens	0	1	1
Sumner	0	2	2
Trego	0	1	1
Washington	0	1	1
Woodson	0	1	1
Total January	30	130	160
Total December	30	122	152
Difference	0	8	8

WELLS COMPLETED

BUTLER COUNTY

30-26 5 Koogler, Magnolia Pet. Co. 68 .. 50
27-28- 4 Martin, Flint Hill O. & G. Co. 2 ..... gas

Wells completed 2
Production 50
Gas 1
Gas production 500,000

CHASE COUNTY

5-19- 7 Morris, Ryan et al 1 ..... dry

Wells completed 1
Dry 1

COWLEY COUNTY

22-32- 4 Townsite, McKnabb et al 2 (Wallace) 75
Brane, McKnabb et al 1 450
20-31- 6 Peringer, Lewis Prod. Co. 1... dry
22-32- 4 Mattison, Knox Drlg. Co. 1 ... 150
16-35- 4 Union State Bank, Slocum et al 1 ..... dry
22-32- 4 Wilcoxon, Roth & Faurot 1 ... 200
Moyer, Roth & Faurot 1 700
Mattison, Roth & Faurot 1 ... 600
2-33- 5 Brewer, Brewer et al 1 ..... dry

Wells completed 9
Production 2175
Dry 3

ELLSWORTH COUNTY

25-16-10w Schocht, Barnsdall Oil Co. et al 1 ..... dry
22-16-10w Stoltenberg, Derby Oil Co. and Aladdin Oil Co. 1 1524

GREENWOOD COUNTY

9-24-12 Lewis, Empire O. & R. Co. 1.. dry
28-23-11 Beal, Gore & Phillips 9 600
21-24-12 Johnson, Polhamus et al 4 .... dry
2-25-10 Hawthorn, McGinnis et al 1... dry

Wells completed 4
Production 600
Dry 3

McPHERSON COUNTY

30-18-2w Rolander H. C. Finefrock et al 1-A 10
16-19-1w Fletcher "A," Darby Pet. Corp. 2 ..... gas
31-19-1w Ritz, Reserve Oil Co. and Shell Pet. 2 977
30-19-1w Whitwright, Mid-Kansas O. & G. Co. 2 ..... gas
23-19-2w Dunsford, Wolf Creek Oil Co. and Sinclair O. & G. 1 90
35-19-2w Dielman, Rosenthal et al 1 ...1494
12-20-2w Munn, The Texas Co. 1 ..... dry
15-21-3w Neufeldt, Ritz O. & G. Co. and Shell Pet. 1 ..... dry
36-19-2w Johnson, Olsen Drlg. Co. and Shell Pet. Corp. 3 788

Wells completed 9
Production 3359
Dry 2
Gas 2
Gas production 40,019,565

RICE COUNTY

3-21- 6w Rainey, Rogers et al 2 1200
13-20-10w Sharpe, Cress et al 1 230

Wells completed 2
Production 1430

RUSSELL COUNTY

31-12-15w Brungardt, Mid-West Ref. Co. 18 185

Wells completed 1
Production 185

RUSH COUNTY

14-18-16w Mohr, Mid-Kansas O. & G. Co. 1 ..... gas

Wells completed 1
Gas 1
Gas production 27,500,000

SEDGWICK COUNTY

15-25-1e Casey, Continental Oil Co. 1... 402
18-27-2 Murdock, National Ref. Co. et al 1 240
19-27-2 Eastborough, Derby Oil Co. 3.. 700
19-27-2 Wheeler, Magnolia Pet. Co. 2.. 550
16-26-1e Goodrich, Continental Oil Co. 2 605
17-27-2 Davies, Roy Ramsey et al 2 ... 300
19-27-2 Eastborough, Derby Oil Co. 4.. 900
Eastborough, Derby Oil Co. 5.. 900
18-27-2 Murdock, National Ref. Co. 2.. 60
9-25-1e Black, Continental Oil Co. 1 .. dry

Wells completed 10
Production 4657
Dry 1

SUMNER COUNTY

12-33-4w Porter, Spencer et al 1 ..... dry

Wells completed 1
Dry 1

TEXAS PANHANDLE

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	2	0	0	2
Gray	7	891	0	2
Hutchinson	2	238	0	0
Moore	3	375	0	2
Ttl. Panhandle, Jan..	14	1,504	0	6
Ttl. Panhandle, Dec..	10	1,814	0	3
Difference	4	310	0	3

Summary of Rigs and Wells Drilling

	Rigs	S.D.	Drig.	Ttl.
Carson	4	0	1	5
Gray	5	5	7	17
Hutchinson	3	2	0	5
Moore	4	1	2	7
Wheeler	0	1	1	2
Miscellaneous	0	8	1	9
Ttl. Panhandle, Jan.	16	17	12	45
Ttl. Panhandle, Dec.	11	14	27	52
Difference	5	3	15	7

WELLS COMPLETED

CARSON COUNTY

McCoy-T, Texoma Natural Gas Co. 1.. gas
Schafer-S, Texoma Natural Gas Co. 3.. gas

Wells completed 2
Gas 2
Gas production 93,000,000

GRAY COUNTY

L. E. Webb, Graham, Cree & Hoover 1 150
J. S. Morse, Parton & Holt 1 85
H. Horner, Dixon Creek O. & R. Co. 2.. 210
R. E. Smith, Kewanee O. & G. Co. 5... 363
Carpenter, Mid-Kansas O. & G. Co. 1.. gas
J. S. Morse, Prairie O. & G. Co. 1..... 82
Carpenter, Vulcan Corp. 1 1

Completions 7
Production 891
Gas 2
Gas production 50,000,000

MOORE COUNTY

Coon-M, Texoma Nat. Gas Co. 3 ..... gas
Coon-M, Texoma Nat. Gas Co. 2 ..... gas
W. W. Burnett, Gulf Prod. Co. 1 375

Wells completed 3
Production 375
Gas 2
Gas production 14,250,000

HUTCHINSON COUNTY

Pitcher-A, Smith & McDannald 4 233
Johnson (Sec. 30), Skelly Oil Co. 1..... 5

Wells completed 2
Production 238
Gas production 3,000,000

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	7	163	4	0
Brown	2	136	1	0
Coleman	3	80	2	0
Jack	1	0	1	0
Montague	1	302	0	0
Shackelford	6	31	3	0
Wichita	5	225	4	0
Wilbarger	1	0	1	0
Young	17	559	8	0
Ttl. N. Cen. Tex., Jan.	43	1,596	24	0
Ttl. N. Cen. Tex., Dec.	65	1,461	34	4
Difference	22	135	10	4

Summary of Rigs and Wells Drilling

	Rigs	S.D.	Drig.	Ttl.
Archer	12	5	13	30
Brown	1	3	4	8
Callahan	2	0	2	5
Coleman	2	3	1	6
Cooke	2	1	0	3
Clay	0	1	0	1
Eastland	2	0	5	7
Erath	0	2	0	2
Jack	1	2	3	6
Palo Pinto	0	6	13	19
Shackelford	2	0	1	3
Stephens	0	2	5	7
Throckmorton	2	1	1	4
Wichita	2	4	2	8
Wilbarger	1	2	2	5
Young	12	6	15	33
Miscellaneous counties	5	8	8	21
Ttl. N. Cen. Tex., Jan.	47	46	75	168
Ttl. N. Cen. Tex., Dec.	45	45	69	159
Difference	2	1	6	9

WELLS COMPLETED

ARCHER COUNTY

Young-Murrell, McCarty & Richards 1.. dry
J. H. Turbeville-C, W. B. Omohundro 1 dry
Oil Investment Co., Bridwell Oil Co. 21 50
Young & Langford, Jack Story et al 1.. dry
J. A. Wood, George Alexander, Jr., 1... dry
W. J. Logan, F. P. Cullum et al 1..... 83
F. C. Green, Schultz & Weaver 7..... 30

Wells completed 7
Production 163
Dry 4

BAYLOR COUNTY

J. W. Stevens et al, C. G. Hart et al 1 .....Location temp. abd

BROWN COUNTY

Mrs. H. J. Tervooen, H. P. Evans 1.... dry
E. P. and W. H. Kilgore-E, Humble O. & R. Co. 2 136

COLEMAN COUNTY

J. M. Witcher, Jamison-Pollard-Forester 1 ..... dry
Frank Golson, Brck Oil Co. 8 80
W. P. Fletcher, Mattocks et al 1..... dry

Wells completed 3
Production 80
Dry 2

JACK COUNTY

Sarah Maxey-A, Ascot Co. 1 ..... dry

MONTAGUE COUNTY

J. H. Brown, Bridwell Oil Co. 1 302

SHACKELFORD COUNTY

W. R. Biggs, George Callahan 1 7
Dodson, L. Heck et al 1 ..... dry
L. E. Hill, F. C. Walker 1 12
H. M. Palm, H. M. Palm 1 ..... dry
A. A. Clark, D. C. Pratt 8 12
Mrs. J. W. Clausell, C. S. Spelling 1... dry

Wells completed 6
Production 31
Dry 3

WICHITA COUNTY

Allen-Kemp-A, C. W. Clark et al 2 225
Foster-Allen, George Proctor 1 ..... dry
Allen-Kemp, United Producers Co. 4.... dry
Parker et al, Wheeler & Brashear 1.... dry
George L. Doble, George J. Proctor 1.. dry

Wells completed 5
Production 225
Dry 4

WILBARGER COUNTY

F. P. Yarbrough, John O'Neil 1 ..... dry

YOUNG COUNTY

J. B. Foster, Degener & Co., Inc.. 1.... dry
W. T. Finch, H. A. Fonville 1 ..... dry
S. R. Jeffery-B, W. H. Hammon 4..... 79
J. F. Larimore, King Royalty Co. 33.... 10
S. R. Jeffery-C, George Mollenkoph 1.. dry
C. F. Newman, Simmons & Lively 1 3
J. F. Larimore, United Prod. Co. 3.... 292
A. V. Truehart, J. P. Coleman et al 1.. dry
J. F. Larimore, King Royalty Co. 34.... 125
J. T. Lowe, King Royalty Co. et al 1.... dry
W. B. Bailey, J. D. Nix 1 ..... dry
O. Deitrich, Pet. Prod. Co. et al 7..... 25
J. D. Lowe, F. L. Roden 1 (T.D. 310 ft.) abd
J. H. Choat, Terrell Willis et al 1..... dry
A. C. Watson, R. J. Watson 9 20
V. Swain, Wooten & Reed 1 36
W. L. Newby, Hinson, Tidwell, Phillips 1 69

Wells completed 17
Production 659
Dry 8

WEST TEXAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Fisher	2	300	1	0
Howard	1	152	0	0
Irion	1	0	1	0
Pecos	3	737	1	0
Upton	2	612	0	0
Ward	2	65	0	0
Total W. Tex. Jan...	11	1,866	3	0
Total W. Tex. Dec...	14	3,068	6	0
Difference	3	1,202	3	0

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drig.	Ttl.
Crane	0	0	0	0
Ector	0	1	1	2
Fisher	0	0	5	5
Howard	1	2	0	3
Irion	0	2	1	3
Jones	2	0	0	2
Loving	0	7	4	11
Pecos	1	2	2	5
Reagan	0	1	6	7
Upton	0	0	1	1
Ward	2	8	10	20
Winkler	0	0	3	3
Miscellaneous	2	21	6	29
Total W. Tex. Jan. ...	8	44	39	91
Total W. Tex. Dec. ...	9	44	37	90
Difference	1	0	2	1

WELLS COMPLETED

FISHER COUNTY

P. R. Miller, The Texas Company 1.... 300
C. W. Crawford, Service Oil Co. 1 ..... dry

HOWARD COUNTY

W. R. Settles-C, American Maracaibo Co. 4 ..... *600
W. R. Settles, Cardinal Oil Co. 2..... †20
W. R. Settles, Group No. 1 and Continental 5 .....‡1440
Otis Chalk, Merrick & Lamb 2 152

New wells completed 1
New production 152

*This well formerly completed April 4, 1929, total depth 2,248 feet, initial production 1,914 bbls. †This well formerly completed January 9, 1929, total depth 2,302 feet, initial production 903 bbls. ‡This well formerly completed March 20, 1929, total depth 2,227 feet, initial production 250 bbls.

IRION COUNTY

J. M. Nutt, J. W. Ellis et al 1..... dry

PECOS COUNTY

J. H. Tippett-E (Kirby), Cardinal Oil Co. 9 20
H. Monroe, Corvette Oil Corp. 5 ..... dry
H. Monroe, Corvette Oil Corp. 6 717

Wells completed 3
Production 737
Dry 1

UPTON COUNTY

Crier-McElroy, Gulf Prod. Co. 8 440
John F. Lane-C, T. P. Coal & Oil Co. 1 183

Wells completed 2
Production 612

WARD COUNTY

E. H. Brown, Stanolind O. & G. Co. 1 *17
Esther Beatty, Bradford & Bentley 1.. 40
S. F. Hayzlett, Shipley et al 5 25
R. H. Gill, Buck Sturm et al 1 .....†135

New wells completed 2
New production 65

*This well formerly completed October 7, 1931, total depth 2,559 feet, initial production 17 bbls. †This well formerly completed July 7, 1931, total depth 2,473 feet, initial production 115 bbls.

WINKLER COUNTY

Grisham-Hunter, Republic Prod. Co. 10.*250

Gas production 18,000,000

*This well formerly completed November 3, 1928, total depth 2,552 feet, initial production 1,000 bbls.

SOUTHWEST TEXAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Bruner	0	0	0	0	1	1	2
Dobrowolski	1	8	0	0	1	1	2
Darst Creek	0	0	0	0	0	0	0
Camp	1	0	1	0	0	1	1
Cooksey	1	15	0	0	0	0	0
Chittim	0	0	0	0	0	1	1
McFadden	1	600	0	0	0	0	0
Mirando	29	3,297	5	3	2	10	12
Pettus	4	1,075	1	1	2	3	5
Saxet	2	0	0	2	0	1	1
Slick	0	0	0	0	0	1	1
Welder	0	0	0	0	0	0	0
White Point	1	0	0	1	0	0	0
Miscellaneous	10	0	9	1	16	74	90
Total Jan.	50	4,995	16	8	22	93	115
Total Dec.	58	6,154	29	5	21	91	112
Difference	8	1,159	13	3	1	2	3

WELLS COMPLETED

PETTUS POOL—BEE COUNTY

Ray, T. B. Slick estate 2 ..... gas
E. Gremmel, The Texas Company 1....1000
Ray, United Production Co. 39 75
Ray, H. E. Weinert 1 ..... abd

COOKSEY POOL—BEXAR COUNTY

Pollock, Witherspoon Oil Co. (Chiquita Oil Co.) 2 15

DOBROWOLSKI POOL—BEXAR COUNTY

Beck, Gatlin Oil Co. 9 8

COLE POOL—DUVAL COUNTY

Benavides, Cole Petroleum Co. 73 100
Benavides, Cole Petroleum Co. 74 100

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY
Bishop Cattle Co., The Texas Company 4 720
Bishop Cattle Co., Duval Oil Corp. 7.. gas
Wilson, Magnolia Petroleum Co. 7..... abd
CAMP POOL—GUADALUPE COUNTY
Dan Denman, Humble Oil & Ref. Co. 2. abd
SAXET POOL—NUECES COUNTY
Roark, Neal, Milton & Kepley Prod. Co. 1 ..... gas
T. M. Harrell, Houston Oil Co. 1-A .... gas
WHITE POINT POOL—SAN PATRICIO COUNTY
Rachel, Saxet Oil Co. 18 ..... gas
LOS OLMOS POOL—STARR COUNTY
Kelsey-Bass, Los Olmos Oil & Gas Co. 9 50
Kelsey-Bass, Rio Oil & Gas Co. 2 30
Kelsey-Bass, Hooks & Weaver 30
Kelsey-Bass, Jenkins & Powers 1 ..... abd
McFADDEN POOL—VICTORIA COUNTY
McFadden, The Texas Company 2 600
CAROLINA-TEXAS POOL—WEBB COUNTY
Barnsley, Carolina-Texas Oil & Gas Co., Inc. 10 ..... abd
CHARCO-REDONDO POOL—ZAPATA COUNTY
Martinez, Bob & Richey 27 2
CUELLAR POOL—ZAPATA COUNTY
Cuellar, O. W. Killam 47-B ..... abd
ESCOBAS POOL—ZAPATA COUNTY
Medina (S. Bustamente), O. W. Killam 1 100
Medina (S. Bustamente), O. W. Killam 2 200
Jose Bustamente, F. H. Etheridge 3.... 150
Jose Bustamente, F. H. Etheridge 4.... 100
Jose Bustamente, Fairway Prod. Co. 3.. 150
Jose Bustamente, Winch & Billings 5.. 200
Bustamente, Winch & Billings 6..... 170
Bustamente, O. W. Killam 12 100
Bustamente, O. W. Killam 13 500
Bustamente, O. W. Killam 16 ..... gas
M. Garza estate, J. M. Gier 1 ..... abd
Trevino, S. R. C. Oil Co. 5-E 50
Trevino, Trevino Oil Corp. 14-A 150
Gutierrez, Allied Oil & Gas Co. 18 150
Gutierrez, Allied Oil & Gas Co. 19 125
Gutierrez, Allied Oil & Gas Co. 20 120
JENNINGS POOL—ZAPATA COUNTY
Measles, United Production Co. 10 .... gas

Wells completed 40
Production 4995
Gas 147,000,000
Abandoned 7

MISCELLANEOUS COUNTIES
Bastrop County—
Wm. Bahn, Marts et al 1 ..... abd
Bee County—
Mary Dorenfield, Al Buchanan 1 ..... abd
P. H. Martin, J. C. Hughes et al 1 .... abd
Hidalgo County—
J. B. Brock, American Petroleum Engineering Co. 1 ..... abd
Live Oak County—
Sanger, Phillips Petroleum and Henderson Coquat 1 ..... abd
Terrell, V. G. Schimmel 1 ..... abd
Medina County—
L. Crawford, Genard Brothers 1 ..... abd
Webb County—
Reiser, O. W. Killam 2 ..... abd
Zapata County—
Prudencia Benavides, Lowe, Rogers et al 3 ..... gas
M. Garza, E. K. Bateman 1 ..... abd

Wells completed 10
Gas 10,000,000
Abandoned 9

GULF COAST FIELDS

Texas

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Barbers Hill	7	9,540	0	0	0	13	13
Big Creek	1	0	1	0	0	0	0
Blue Ridge	1	25	0	0	0	0	0
Damon Mound	1	0	1	0	0	1	1
Esperson	0	0	0	0	0	1	1
Fannett	1	0	1	0	0	1	1
High Island	0	0	0	0	0	2	2
Hull	1	10	0	0	1	1	2
Humble	3	370	1	0	0	3	3
Lost Lake	1	0	1	0	0	1	1
Markham	1	0	0	1	0	0	0
Moss Bluff	2	0	2	0	0	1	1
Nash	0	0	0	0	0	1	1
Orchard	1	1,200	0	0	0	0	0
Pierce Junc.	3	1,500	1	0	0	3	3
Fort Neches	0	0	0	0	1	1	2
Rabbs Ridge	2	5,700	0	0	1	2	3
Refugio	2	100	0	1	0	0	0
Saratoga	3	94	0	0	0	1	1
Miscellaneous	8	600	7	0	1	13	14
Total, Jan.	38	19,639	15	2	4	45	49
Total, Dec.	24	10,836	8	2	2	67	70
Difference	14	8,803	7	0	1	22	21

Louisiana

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Bayou Blue	0	0	0	0	0	1	1
Choctaw	0	0	0	0	0	2	2
Edgerly	1	0	1	0	0	0	0
E. Hackberry	5	9,280	0	0	0	6	6
Iowa	0	0	0	0	2	0	2
Jennings	0	0	0	0	0	1	1
Leesville	1	1,500	0	0	0	0	0
Lockport	2	1,000	0	1	0	0	0
Port Barre	0	0	0	0	1	0	1
Starks	0	0	0	0	0	1	1
Sulphur	0	0	0	0	0	1	1
Sweet Lake	0	0	0	0	0	1	1
Vinton	1	10	0	0	0	1	1
Miscellaneous	2	0	2	0	3	7	10
Total, Jan.	12	11,790	3	1	6	21	27
Total, Dec.	10	10,340	4	0	3	19	22
Difference	2	1,450	1	1	3	2	5

Summary Gulf Coast

Total, Jan.	50	31,429	18	3	10	66	76
Total, Dec.	34	21,176	12	2	6	86	92
Difference	16	10,253	6	1	4	20	16

TEXAS
WELLS COMPLETED
BARBERS HILL—CHAMBERS COUNTY
Wilburn, Mills Bennett Production Co. 6 1280
Gulf Fisher, Mills Bennett Production Co. 5 2000
Wilburn, McAlbert Oil Co. 1 400
Wilburn, Sun Oil Co. 12 1200
Winfree, Sun Oil Co. 2 500
J. M. Fitzgerald, Texas Gulf Producing Co. 1 2160
Morgan-Fitzgerald, Texas Gulf Producing Co. 1 2000

Wells completed 7
Production 9540

BIG CREEK—FORT BEND COUNTY
Davis, Gulf Production Co. 62 ..... abd
BLUE RIDGE—FORT BEND COUNTY
Blakely, Telshaw & Cady 1 25
DAMON MOUND—BRAZORIA COUNTY
Cave, The Texas Company 1 ..... abd
FANNETT—JEFFERSON COUNTY
Junker, Texas Gulf Sulphur Co. 1 ..... abd
HULL—LIBERTY COUNTY
Bashara, Daisetta & Liberty Oil Co. 1. 10
HUMBLE—HARRIS COUNTY
C. O. & G. Texas Co. fee, Burt et al 1. 70
Bender, Sun Oil Co. 26 800
Stephenson fee, The Texas Company 46 abd

Wells completed 3
Production 870
Abandoned 1

LOST LAKE—CHAMBERS COUNTY
Lost Lake, Pure Oil Co. 6 ..... abd
MARKHAM—MATAGORDA COUNTY
Hawk, Deering & Newman 1 ..... gas
MOSS BLUFF—LIBERTY COUNTY
McFaddin, Gulf Production Co. 4 ..... abd
Sergeant, Texas Gulf Sulphur Co. 2 .... abd

Wells completed 2
Abandoned 2

ORCHARD—FORT BEND COUNTY
Moore, Gulf Production Co. 31 1200
PIERCE JUNCTION—HARRIS COUNTY
Taylor, Gulf Production Co. 34 900
Hooks, Humble Oil & Refining Co. 1 .. 600
Gulf fee, Southern Petroleum Corp. 1.. abd

Wells completed 3
Production 1500
Abandoned 1

RABBS RIDGE—FORT BEND COUNTY
Hampil, trustee, Cullen & West and Gulf Prod. Co. 1 2500
Booth-Meyers, Gulf Production Co. 1.3200

Wells completed 2
Production 5700

REFUGIO—REFUGIO COUNTY
Fox, United Production Corp. 2-A 100
St. John heirs, Moody Seagraves Prod. Co. 2-A ..... gas

Wells completed 2
Production 100
Gas 1

SARATOGA—HARDIN COUNTY
Cotton, Rio Bravo Oil Co. 124-A 50
Cotton, Rio Bravo Oil Co. 125-A 25
Cotton, Rio Bravo Oil Co. 126-A 19

Wells completed 3
Production 94

MISCELLANEOUS TEXAS
Brazoria County—
John Peske Sur., Levitt, United Oil Syndicate 1 ..... abd
Grimes County—
Pat B. O'Connor Sur., Cuthrell, Rianjo Oil Co. 2 ..... abd
Matagorda County—
Citrus Grove—Boker, Harvey Smith 1. abd
Montgomery County—
Nichols Sur., Damuth, Karl Young et al 1 ..... abd
Polk County—
J. F. Rumayor Sur., Roberts, Trans Coastal Oil Co. 1 ..... abd
Victoria County—
T.&N.O. Sur. No. 1, Conrad, Houston Oil Co. 1 ..... abd
John M. Rine Sur., McFaddin, The Texas Company 3 600
Washington County—
J. H. Alcorn Sur., Hahn, Moon & Yeager 1-A ..... abd

Wells completed 8
Production 600
Abandoned 7

LOUISIANA
EDGERLY—CALCASIEU PARISH
Hunter, S. A. Emerson et al 14 ..... abd
EAST HACKBERRY—CAMERON PARISH
Watkins, Calcasieu Oil Co. 30 4500
Watkins, Calcasieu Oil Co. 32 2100
Irwin, J. G. Sutton 4 2000
Irwin, J. G. Sutton 5 280
State, Yount Lee Oil Co. 48 400

Wells completed 5
Production 9280

LEESVILLE—LA FOURCHE PARISH
L.L.&E., The Texas Company 3 1500
LOCKPORT—CALCASIEU PARISH
Farquahar, Vacuum Oil Co. 8 ..... gas
Miller, Vacuum Oil Co. 32 1000

Wells completed 2
Production 1000
Gas 1

VINTON—CALCASIEU PARISH
Matilda Gray, Vinton Petroleum Co. 1 .. 10
MISCELLANEOUS LOUISIANA
Iberia Parish—
Jeff. Island—Lage Peigneur, Jefferson Lake Oil Co. 23 ..... abd
Jeff. Island—Lage Peigneur, Jefferson Lake Oil Co. 25 ..... abd

Wells completed 2
Abandoned 2

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Avoylles	0	0	0	0	1	0	1
Bossier	2	0	1	1	0	3	3
Caddo	0	0	0	0	1	3	4
Caldwell	0	0	0	0	0	2	2
Catahoula	0	0	0	0	0	1	1
Claiborne	1	0	0	1	0	0	0
DeSoto	0	0	0	0	1	4	5
Morehouse	0	0	0	0	0	2	2
Natchitoches	1	0	1	0	1	4	5
Ouachita	0	0	0	0	2	2	4
Red River	1	10	0	0	0	1	1
Richland	1	0	0	1	0	2	2
Sabine	13	5,510	6	0	6	28	34
Texas	0	0	0	0	0	1	1
Total Jan.	19	5,520	8	3	12	53	65
Total Dec.	16	120	8	6	15	52	67
Difference	3	5,400	0	3	3	1	2

*Gas production: Bossier, 17,000,000 feet; Claiborne, 13,867,000 feet; Richland, 36,252,000 feet; total, 72,119,000 feet.

WELLS COMPLETED
BOSSIER PARISH
22-19-11 Smith, H. I. Morgan 1 ..... gas
13-16-11 Ardis & Co., D. L. Perkins 1 .. dry

Gas production 17,000,000

CLAIBORNE PARISH
12-19-6 Dobbins, United Gas Public Service Co. 1 ..... gas

Gas production 13,867,000

MOREHOUSE PARISH
3-20- 4 Feazel, Bahan & Bahan 4 (loc.) abd
NATCHITOCHES PARISH
34-11-10 Brown, Mid-West Prod. Co. 1. dry
RED RIVER PARISH
32-13-10 Lockett, Mack Jourdan Co. 1.. 10
RICHLAND PARISH
13-17- 5 Hunt, Alto Gas Co. 2 (loc.).... abd
37-15- 6 C. M. Noble, Southern Carbon Co. 1-B (loc.) ..... abd
34-17- 6 Colvin, United Gas Public Service Co. 1-B ..... gas

Gas production 36,252,000

SABINE PARISH
2- 7-11 McCormick, Crescent Drilling Co. 2 ..... dry
6- 7-10 Vincent, Beene et al 1 (loc.).. abd
16- 8-11 Skinner, Gerhig Oil Co. 1 .... dry
1- 7-11 Brown Lumber Co., M. J. Kissick 1 ..... dry
2- 7-13 Parle, W. F. Lacey 1 ..... dry
14- 7-11 Clanan, Lyones & Neely 1.... 65
1- 7-11 Bush, L. K. McGuffin 1 100
2- 7-12 Bowman-Hicks, Ohio Oil Co. 11 ..... dry
35- 8-12 Bowman-Hicks, Ohio Oil Co. 13 20
11- 7-13 Martinez, Rush & French 1 ..3000
12- 7-11 Gardner, Smitherman & Grigsby 1 2400
2- 7-13 Martinez, Smitherman & Grigsby 1 ..... dry

Production 5510
Dry 6

MISSISSIPPI

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Clarke	1	0	1	0	0	0	0
Hinds	2	0	0	2	4	3	7
Jasper	0	0	0	0	0	1	1
Lowndes	0	0	0	0	1	0	1
Monroe	0	0	0	0	0	2	2
Newton	0	0	0	0	0	1	1
Noxubee	0	0	0	0	0	1	1
Rankin	7	0	1	6	6	1	7
Scott	0	0	0	0	1	0	1
Sharkey	0	0	0	0	1	0	1
Warren	0	0	0	0	0	1	1
Total Jan.	10	0	2	8	13	10	23
Total Dec.	6	0	1	5	9	20	29
Difference	4	0	1	3	4	10	6

*Gas production: Hinds, 65,000,000 feet; Rankin, 244,000,000 feet; total, 309,000,000 feet.

WELLS COMPLETED
CLARKE COUNTY
25-12-25 Long Bell Lumber Co., Gulf Ref. Co. 1-A ..... dry
HINDS COUNTY
9- 5- 1 Jackson College, Howard Oil Co. 1 ..... abd
34- 6- 1 Fee, Millsaps College 1 ..... gas
24- 6- 1 Mosal, Ridgeway & McGehee 1 gas
4- 5- 1 Miss. Cotton Seed Products Co., F. E. Stewart 1 (loc.) ..... abd

Gas production 65,000,000

RANKIN COUNTY
12- 5- 1 Hurst, James Alexander 1 ... gas
12- 5- 1 Brown, Anderson et al 1 ..... gas
11- 5- 1 Casey & Wellon, Anderson et et 1 ..... gas
12- 5- 1 Gulf States Creosoting Co., Baker-Owens 1 ..... gas
23- 6- 1 Hanna, Gulf Ref. Co. 1-A .... dry
12- 5- 1 Motor, Pioneer Oil & Gas Co. 1 gas
12- 5- 1 Green, Pioneer Oil & Gas Co. 1 gas

Gas production 244,000,000

ARKANSAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Clay	0	0	0	0	0	1	1
Cleburne	0	0	0	0	0	1	1
Cleveland	0	0	0	0	1	0	1
Columbia	0	0	0	0	0	1	1
Dallas	0	0	0	0	1	1	2
Drew	0	0	0	0	0	1	1
Hot Springs	0	0	0	0	0	1	1
Lawrence	0	0	0	0	1	0	1
Lincoln	0	0	0	0	0	1	1
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Miller	0	0	0	0	0	1	1
Ouachita	1	0	1	0	0	1	1
Pike	0	0	0	0	0	2	2
Prairie	0	0	0	0	1	0	1
Scott	0	0	0	0	0	2	2
Sevier	0	0	0	0	0	1	1
Union	1	0	1	0	4	8	12
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	0	1	1
Yell	0	0	0	0	0	1	1
Total Jan.	2	0	2	0	8	27	35
Total Dec.	3	50	2	0	9	27	36
Difference	1	50	0	0	1	0	1

WELLS COMPLETED
LITTLE RIVER COUNTY
25-12-25 Russell, Roberts Oil Co. 1 (loc.) abd
OUACHITA COUNTY
10-15-16 Lambert, Wilson & Chapman 1 dry
UNION COUNTY
13-18-13 Union Saw Mill Co., Modisette et al 1 ..... dry

ROCKY MOUNTAIN AREA

NEW MEXICO
Summary of Field Operaitons

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
De Baca	0	0	0	0	0	2	2
Eddy	3	0	3	0	2	6	8
Lea	2	8,165	0	0	2	4	6
McKinley	0	0	0	0	1	6	7
Rio Arriba	0	0	0	0	0	3	3
San Juan	1	400	0	0	0	7	7
San Miguel	0	0	0	0	0	5	5
Torrance	1	0	0	1	0	1	1
Miscellaneous	0	0	0	0	1	13	14
Total Jan.	7	8,565	3	1	6	47	53
Total Dec.	4	3,524	1	1	4	50	54
Difference	3	5,041	2	0	2	3	1

WELLS COMPLETED
12-7n-7e DeHart, Estancia Valley Carbon Dioxide 2 ..... gas
2-29-19 Continental Oil Co. 27 400
4-19-38 Byers, Midwest Ref. Co. 8 5800
33-18-38 State, Midwest Ref. Co. 26 ...2365
8-16-25 Watson, Union Sulphur Co. 1.. abd
7-16-25 Harlan, Union Sulphur Co. 1 .. abd
7-16-25 Ault, Union Sulphur Co. 1 .... abd

Wells completed 7
Production 8565
Dry and abandoned 3
Gas production 140,000

COLORADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Arapahoe	0	0	0	0	0	2	2
Boulder	0	0	0	0	0	4	4
Elbert	0	0	0	0	0	3	3
Fremont	0	0	0	0	0	5	5
La Plata	0	0	0	0	1	3	4
Larimer	1	0	1	0	2	10	12
Las Animas	0	0	0	0	1	2	2
Moffat	0	0	0	0	2	3	5
Morgan	3	0	3	0	2	1	3
Rio Blanco	0	0	0	0	0	4	4
Routt	0	0	0	0	1	2	3
Weld	1	0	1	0	3	7	10
Miscellaneous	0	0	0	0	0	25	25
Total Jan.	5	0	5	0	12	71	83
Total Dec.	0	0	0	0	13	72	85
Difference	5	0	5	0	1	1	2

WELLS COMPLETED
16-6n-61 State, Aztec Corp. 1 ..... abd
14-4n-58 Pumphrey, Colorado Assoc. 1 .. dry
16-1n-57 State, Indian Ter. Ill. Oil 1 ... dry
2-5n-60 Mortier, Prairie O. & G. Co. 1. dry
17-n4-69 Fagan, Raddatz Corp. 2 ..... dry

Wells completed 5
Dry and abandoned 5

WYOMING
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Horn	0	0	0	0	0	2	2
Carbon	0	0	0	0	1	6	7
Converse	0	0	0	0	0	3	3
Crook	0	0	0	0	0	1	1
Fremont	0	0	0	0	1	1	2
Hot Springs	0	0	0	0	0	2	2
Johnson	0	0	0	0	0	1	1
Lincoln	0	0	0	0	0	2	2
Natrona	2	0	2	0	5	5	10
Niobrara	0	0	0	0	0	1	1
Park	0	0	0	0	2	7	9
Sheridan	0	0	0	0	0	1	1
Sweetwater	0	0	0	0	2	5	7
Sublet	0	0	0	0	0	7	7
Uinta	0	0	0	0	0	6	6
Washakie	0	0	0	0	0	2	2
Weston	0	0	0	0	1	14	15
Total Jan.	2	0	2	0	12	66	78
Total Dec.	3	700	1	0	11	67	78
Difference	1	700	1	0	1	1	0

WELLS COMPLETED
25-31-82 Roy C. Tarrant et al 1 ..... dry
23-36-85 Heery, Cuyler Oil Co. 1 ..... dry

Wells completed 2
Dry and abandoned 2

UTAH
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total Jan.	0	0	0	0	1	19	20
Total Dec.	0	0	0	0	1	19	20
Difference	0	0	0	0	0	0	0

MONTANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Carbon	2	3,686	0	0	3	5	8
Cascade	0	0	0	0	0	3	3
Fergus	0	0	0	0	0	2	2
Glacier	0	0	0	0	2	4	6
Hill	0	0	0	0	1	1	2
Liberty	1	100	0	0	1	5	6
Pondera	0	0	0	0	0	2	2
Teton	0	0	0	0	0	4	4
Toole	3	150	1	1	5	5	10
Miscellaneous	0	0	0	0	1	17	18
Total Jan.	6	3,936	1	1	13	48	61
Total Dec.	3	200	2	0	16	56	72
Difference	3	3,736	1	1	3	8	11

WELLS COMPLETED

2-37-4w Iowa Holding, Hannah-Porter 1 150
11-34-1w Wright, Wagner - Mallernee - Trott 2 ..... gas
32-34-2w Higgs, R. E. Craft et al 1 ... dry
26-27-4e Hicks, Western Nat. Gas 1 ... 100
7-7s-22 Armstrong, Carbon O. & G. 1 .. 2800
2-7s-21 Chapman, Ohio Oil Co. 1 886

Wells completed 6
Production 2936
Gas production 2,000,000
Dry and abandoned 1

EASTERN FIELDS

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Allegany	24	134	1	1
Bradford	51	101	0	0
Venango-Clarion	5	4	0	2
Butler-Armstrong	2	4	0	1
Middle Field	1	0	1	0
Tioga-Wayne	9	0	2	7
Southwest Pennsylvania	6	10	3	2
Southeast Ohio	24	312	4	3
West Virginia	27	58	4	18
Total, January	150	623	15	34
Total, December	166	567	24	43
Difference	16	56	9	9

Summary of Work Under Way

Field—	Rigs	Dlg.	Ttl.
Allegany	2	12	14
Bradford	8	24	32
Venango-Clarion	0	5	5
Butler-Armstrong	0	5	5
Middle Field	0	4	4
Tioga-Wayne	6	33	39
Southwest Pennsylvania	3	10	13
Southeast Ohio	11	21	32
West Virginia	17	43	60
Total, January	47	157	204
Total, December	45	160	205
Difference	2	3	1

WELLS COMPLETED

ALLEGANY

Westran, Mrs. H. S. Westran 3
McCaffery, B. McCaffery et al 4
Shaner, N. V. V. Franchot 3
Fee, Eyder & Richmons Oil Corp. 2
Kinley, Pure Penn Oil, Inc. 1
Fee, Miller Bros. et al 10
Fee, Miller Bros. et al 20
Fee, N. V. V. Franchot 30
Fee, N. V. V. Franchot 9
Kurtzhaltz, E. G. and F. W. Stephan ... 1
Lippert, C. M. Lippert et al 5
Stewart, Sepany Oil Co. 2
Fee, Hugh Flynn Oil Co. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Reddy, A. L. Shaner et al 2
Fee, Sawnett Oil Corp. ..... pressure
South Penn, Bradley & Streeter 5
Childs, Martin Bros. 20
Foster, Dieter & Kroh ..... dry
Pierce, F. L. & M. A. Putnam ..... gas
Fee, Macadam Oil Co. 5
Ames, O. A. Eastman et al 5

Completions 24
Production 134
Dry 1
Gas 1
Pressure 1

BRADFORD

Fee, E. D. Keyner Oil Co. ..... pressure
Fee, G. W. Smith estate 12
Rasey, J. W. Kaufman ..... pressure
Fee, Mix Creek Oil Co. 1
Fee, D. M. Hoffman estate 1
Bell, J. S. Brown 1
Bingham 464, R. S. Pringle 38 1
Fee, M. Hungiville 22 2
Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Oil Corp. 1
Fee, Forest Petroleum Corp. 1
Fee, Forest Pet. Corp. (7 wells) ... pressure
Quintuple, McKean Producing Co. 2
Fee, Moses Sullivan 5
Fee, Olean Petroleum Co. 10
Hunt, Healey Petroleum Corp. ..... pressure
Melvin, South Penn Oil Co. 1
Melvin, South Penn Oil Co. 1
Melvin, South Penn Oil Co. 1
Melvin, South Penn Oil Co. 1
Harter, Bradford Producing Co., Inc. ... 2
Borden, T. P. Thompson, Jr. 3
Duke, Sloan & Zook Oil Co. ..... pressure
Duke, Sloan & Zook Oil Co. 3
Fee, Dallas Oil Co. 3
Quintuple, Healey Petroleum Corp. 2
Quintuple, Myron W. Matson ..... pressure
Fee, S. & L. Tartarella 1
Robertson, Ball & Ryan 2
Burdic, South Penn Oil Co. ..... pressure
Burdic, South Penn Oil Co. ..... pressure
Fee, Indian Creek Oil Co. 5
Fee, Indian Creek Oil Co. 3
Fee, Mrs. Maude Roat ..... pressure
Fee, Sloan & Zook Producing Co. ... pressure
Fee, Sloan & Zook Producing Co. ... pressure
Franchot, F. M. Johnston & Son 2
Franchot, Bradford Producing Co., Inc. 20
Newell, E. E. Bryner & Son 8
Cram, Minard Run Oil Co. ..... pressure
Cram, Minard Run Oil Co. 1
Cram, Minard Run Oil Co. 2
Morris, Healey Petroleum Corp. ... pressure

Completions 51
Production 101
Pressure 19

VENANGO-CLARION

Sizle, United Natural Gas Co. 4,030 .... gas
Sterner, Fryburg Motor Co. 4 ..... gas
Thompson, Rice & Thompson 8 1
Sloan, W. S. Hahn 3 2
Henderson, George & Robert Foggan 54 1

Completions 5
Production 4
Gas 2

BUTLER-ARMSTRONG

Albert, Floyd Albert 3 ..... gas
Bell, T. P. Bell 8 1
Ripper, Willis M. Ruby 1 3

Completions 3
Production 4
Gas 1

MIDDLE FIELD

T. & W., A. E. & W. C. Tompsett 81 .. dry

Completions 1
Dry 1

TIOGA-WAYNE

Middaugh, Pennsylvania Power & Light dry
Boom, Lycoming Drilling Corp. ..... gas
Hall, East Penn Development Co. .... gas
Disbrow, J. T. Carpenter ..... gas
Allen, unknown ..... gas
Dykes, J. B. Reid Syndicate ..... gas
Audrey, Belmont Quadrange ..... gas
Smith, Tallia ferro Corp. ..... dry
Wilston, Penn United Gas Co. ..... gas

Completions 9
Dry 2
Gas 7

SOUTHWEST PENNSYLVANIA

WELLS COMPLETED

BEAVER COUNTY

Ramsey, C. T. Andrews 6 ..... dry

FAYETTE COUNTY

Grimm, Dunn Mar Oil & Gas Co. and Consumers Fuel Co. 1 ..... dry

GREENE COUNTY

Stevens, Philadelphia Oil Co. 1 ..... gas

SOMERSET COUNTY

Herwig, American Nat. Gas Co. 1 .... dry

WASHINGTON COUNTY

Brownlee, Carnegie Nat. Gas Co. 1 ... 10
Stout, Nat. Gas Co. of W. Va. 3..... gas

SOUTHEAST OHIO

WELLS COMPLETED

ATHENS COUNTY

White heirs and Vorhees, Robinson Brothers 1 ..... gas
Gooden, Standard Nat. Gas Co. 1 3

GUERNSEY COUNTY

Marshall, George Jewell et al 1 25

HOCKING COUNTY

McCarty, Preston Oil Co. 13 5

HOLMES COUNTY

Clinage, Lydick Oil & Gas Co. 1 5

JEFFERSON COUNTY

Blackburn, Mount Tabor Oil Co. 20 2

LICKING COUNTY

Ashcraft, George H. Long et al 1 10
Flint Ridge Coal Co., The Wehrle Co. 1 dry

MEDINA COUNTY

Franks, E. R. Edson & Son Co. 31 25
Essig, Oko Oil & Gas Co. 52 2
Gunsard, Preston Oil Co. 5 8
Funk, J. Barnhard et al 3 20
Packard, E. R. Edson & Son Co. 30 60
Franks, E. R. Edson & Son Co. 32 ..... dry
Funk, Frank Barnhard et al 4 10
Packard, E. R. Edson & Son Co. 31 30
Geisinger, Heines et al 4..... 3

MEIGS COUNTY

Jackson, James Simpson et al 1 ..... dry

MUSKINGUM COUNTY

Stutes, Pure Oil Co. 6 ..... gas

NOBLE COUNTY

Mitchell, Warren Brothers et al 1 .... dry

PERRY COUNTY

Caywood, Mid-East Gas Co. 1 100

VINTON COUNTY

Nelson, Co-operative Oil Co. 3 2

WASHINGTON COUNTY

Bosworth, J. Carner et al 1 ..... gas
Martin, F. M. Russell et al 4 2

WEST VIRGINIA

WELLS COMPLETED

BOONE COUNTY

Federal Coal Co., Pure Oil Co. 54 ..... gas
Federal Coal Co., Godfrey L. Cabot 50. gas
Dickinson, Godfrey L. Cabot 2 ..... gas
Bull Creek Land & Coal Co., Columbian Carbon Co. 12 ..... gas
Federal Coal Co., Pure Oil Co. 55 .... gas
Powell et al, Owens-Illinois Glass o. 5. gas

CALHOUN COUNTY

Kerby, L. S. Ayers 1 ..... gas
Evans, Ed Hess et al 2 ..... gas

DODDRIDGE COUNTY

McKinney, Riley Yeater 1..... 5

GILMER COUNTY

Law, Carnegie Natural Gas Co. 1,979... dry
Black, Pgh. & W. Va. Gas Co. 7,571 ... gas

KANAWHA COUNTY

Burdett, Grosscup et al 1 ..... gas

LINCOLN COUNTY

Miller-Topper, Pridemore & Adkins 2 .. gas
Hager, Martin Gas Co. 1 ..... gas

LOGAN COUNTY

Baker, Estep Bland et al 1 ..... gas

MARION COUNTY

Nixon, Owens-Illinois Glass Co. 1 ..... dry

MARSHALL COUNTY

Johnson, Carnegie Nat. Gas Co. 2 ..... gas

MASON COUNTY

Jackson Coal & Mining Co., Berea Gas & Oil Co. 1 10

MONONGALIA COUNTY

Taylor, West Penn Gas Corp. 1 ..... dry
Barrackman, Manufacturers Light & Heat Co. 2 ..... gas

PUTNAM COUNTY

Bird, United Fuel Gas Co. 1 ..... gas

RALEIGH COUNTY

Beaver Coal Co., Godfrey L. Cabot 3 ... dry

ROANE COUNTY

Knopp, W. B. Heeter 2 40
Riddle, Reedy Oil & Gas Co. 4 ..... gas

WAYNE COUNTY

Wilson heirs, Wayne United Gas Co. 40 gas

WIRT COUNTY

Lewis, Biddle and Backus 1 2
Myers, Pollack Myers 1 1

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	1	0	0	1	2	3	6
Lorain	4	0	1	3	2	3	5
Medina	9	198	1	1	1	3	4
Holmes	2	10	0	1	0	1	1
Cuyahoga	0	0	0	0	0	2	2
Richland	2	0	2	0	1	0	1
Coshocton	1	0	0	1	0	1	1
Summitt	0	0	0	0	0	3	3
Licking	3	10	1	1	1	3	4
Muskingum	2	0	1	1	2	8	10
Athens	4	15	1	2	3	6	9
Tuscarawas	1	0	0	1	2	1	3
Stark	12	0	1	11	7	27	34
Guernsey	1	30	0	0	1	3	4
Belmont	2	0	1	1	0	1	1
Gallia	0	0	0	0	0	1	1
Scioto	0	0	0	0	0	2	2
Pike	0	0	0	0	0	2	2
Carroll	1	3	0	0	0	5	5
Columbiana	0	0	0	0	0	1	1
Total Jan.	45	266	9	24	23	76	99
Total Dec.	47	312	12	24	23	83	106
Difference	2	46	3	0	0	7	7

WELLS COMPLETED

ASHLAND COUNTY

Jackson—R. R. Niswender, Ohio Fuel Gas 1-5,595 ..... gas

LORAIN COUNTY

Carlisle—H. F. Eggers, McMillan & Co. 1 gas
Columbia—A. D. Crocker, Ohio Fuel Gas 3-5,603 ..... gas
Grafton—F. Armbruster, Ramage & Willis 1 ..... gas
Avon—P. L. Smith, Daugherty & Dempsey 1 ..... dry

Wells completed 4
Dry 1
Gas 3

MEDINA COUNTY

Chatham—C.&A. Clapp, Preston Oil 21-1,495 20
H. H. Packard, Preston Oil 1-1,496... 65
G. W. Packard, Edson Sons Co. 30 ... 50
G. W. Packard, Edson Sons Co. 31 ... 25
M. A. Frank, Edson Sons Co. 34 ..... dry
Henry Essig, Oko Oil & Gas 53 10
W. M. Geisinger, Heines & Co. 4 3
Westfield—E. G. Norton, Barnhart & Co. 1 ..... gas
Harrisville—Joseph Funk, Barnhart & Co. 6 25

Wells completed 9
Production 198
Dry 1
Gas 1

HOLMES COUNTY

Knox—Rachael Gray, I. E. O'Hall 1 ... gas
Monroe—Ralph Clinage, Lydic Oil & Gas 1 10

Wells completed 2
Production 10
Gas 1

RICHLAND COUNTY

Franklin—Sam Simpson, Chesrown & Co. 1 ..... dry
Plymouth—A. J. Petit, Daly & Co. 1 .. dry

Wells completed 2
Dry 2

COSHOCTON COUNTY

Mill Creek—John Hault, Ohio Gas Light & Coke Co. 4 ..... gas

LICKING COUNTY

Fallsburg—Granville Ashcraft, G. H. Long 4 10
James E. Martin, Emerald Pet. 8 .... gas
Hopewell—James M. Iches, Wehrle Gas 1 ..... dry

Wells completed 3
Production 10
Dry 1
Gas 1

MUSKINGUM COUNTY

Brush Creek—Chas. Enoch, Pure Oil 4. gas
Monroe—Geo. M. Lane, Bell Bros. 1.... dry

Wells completed 2
Dry 1
Gas 1

ATHENS COUNTY

Alexander—Peter J. Glass, Smithenberger 1 ..... dry
Cannan—Robt. Seaman, Ohio Fuel Gas 1-5,607 ..... gas
Lee—Cline & White, I. C. Robinson 1... gas
Waterloo—Almeda J. Young, Standard Natural Gas 1 15

Wells completed 4
Production 15
Dry 1
Gas 2

TUSCARAWAS COUNTY

Clay—Long-Lichty, Ohio Falls Drlg. & Supply 1 ..... gas

STARK COUNTY

Jackson—Margaret Taggart, Kime & Co. 1 ..... gas
B. Crissinger, Ohio Fuel Gas 3-5,593.. gas
Earl Johnson, East Ohio Gas 1, 2.... gas
Besse J. Slagel, East Ohio Gas 1 ..... gas
Daisy Bird, Medford Oil & Gas 1 ... gas
J. J. Kurtzman, Brendall & Co. 1 .... gas
Lake Cable Co., Brendall & Co. 6 .... gas
M. Kisner, Athens Oil & Gas 1 ..... gas
Lawrence—T. & F. Lesser, Brendall & Co. 3 ..... gas
Paris—H. Starkey, East Ohio Gas 1 ... dry
Plain—Mary Gill, Medford Oil & Gas 1. gas

Wells completed 12
Dry 1
Gas 11

GUERNSEY COUNTY

Cambridge—W. & C. Marshall, George Jewell & Co. 1 30

BELMONT COUNTY

Somerset—Grover Parks, Central Gas 1 dry
Allen Price, A. C. Peters & Co. 1 ... gas

Wells completed 2
Dry 1
Gas 1

CARROLL COUNTY

Orange—Thos. Leggett, Collins, Stensill & Co. 1 3

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Seneca	2	0	0	2	0	4	4
Lucas	0	0	0	0	0	2	2
Ottawa	0	0	0	0	0	1	1
Hardin	1	8	0	0	0	0	0
Shelby	0	0	0	0	0	2	2
Logan	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Wyandot	3	10	1	1	2	6	8
Total Jan.	6	18	1	3	2	17	19
Total Dec.	11	342	1	3	3	17	20
Difference	5	324	0	0	1	0	1

WELLS COMPLETED

WOOD COUNTY

Henry—Vincent H. Coons, Ohio Oil 35.. abd
B. A. Lawrence Sec. 22, Ohio Oil 31.. abd
B. A. Lawrence "E", Ohio Oil 1 ..... abd
Bloom—F. D. Slotterbeck, Ohio Oil 2... abd
Israel Simon, Ohio Oil 4 ..... abd
N. W. Ohio Nat. Gas, Ohio Oil 27 ... abd

Abandoned 6

HANCOCK COUNTY

Allen—A. Knoke, Ohio Oil 4 ..... abd
P. Alexander, Ohio Oil 12 ..... abd
Portage—H. W. Stoker, Ohio Oil 2 .... abd
James M. Steen, Ohio Oil 2, 8 ..... abd
J. H. King, Ohio Oil 5, 7, 8, 20 ..... abd
Liberty—Wm. Ranniger Sec. 4, Ohio Oil 9, 17 ..... abd
Wm. Ranniger Sec. 8, Ohio Oil 4 .... abd
Wm. Cusac, Ohio Oil 13 ..... abd
W. C. Watson, Ohio Oil 35 ..... abd

Abandoned 14

AUGLAIZE COUNTY

Douchoquet—Fred Priesar, Lee Tester 2, 6, 7, 8 ..... abd

Abandoned 4

SANDUSKY COUNTY

Scott—Eli Kline, Onsel Bros. 1, 2, 3, 4, 5, 6, 7, 8 ..... abd

Abandoned 8

SENECA COUNTY

Liberty—T.C.&B.G. Shoull, R. E. Greene 1 ..... gas
Chas. J. Hoffer, Cessna-Feasel Oil 1 . gas

Wells completed 2
Gas 2

PERRY COUNTY

Cessna—Thos. Mullady, Commonwealth Gas Corp. 1 8

WYANDOT COUNTY

Tymochtee—R. R. Criswell, Jones & Coyle 2 10
McLeo-Brown, Jones & Coyle 1 ..... gas
A. T. Spayth, O'Neal & Co. 1 ..... dry

Wells completed 3
Production 10
Dry 1
Gas 1

KENTUCKY FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	0	0	0	0	0	1	1
Ohio	3	8	2	0	1	9	10
Daviess	7	87	4	0	0	6	6
Hancock	2	5	1	0	2	7	9
McLean	2	17	0	0	4	9	13
Hart	14	1,005	2	1	0	11	11
Greene	0	0	0	0	0	2	2
Muhlenberg	0	0	0	0	0	1	1
Henderson	0	0	0	0	0	3	3
Webster	0	0	0	0	0	5	5
Edmonson	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Nelson	0	0	0	0	0	1	1
Taylor	0	0	0	0	0	1	1
Hopkins	0	0	0	0	0	3	3
Cumberland	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Bath	0	0	0	0	0	1	1
Christian	2	0	0	2	0	5	5
Breckenridge	0	0	0	0	0	1	1
Total Jan.	30	1,122	9	3	7	70	77
Total Dec.	49	1,460	11	8	7	65	72
Difference	19	338	2	5	0	5	5

WELLS COMPLETED

OHIO COUNTY

Hartford—Will Griffith, Chester Oil 1.. 8
C. E. Farmer, J. E. Hare & Co. 2..... dry
A. F. Bellamy, Breener-Adams Co. 5. dry

Wells completed 3
Production 8
Dry 2

DAVIESS COUNTY
Owensboro—Chas. Bell, Cox & Co. 3 ... 75
Tom Clark, S. H. Russell & Co. 1 ... 5
A. James, Whitmer Oil 1 ... 7
Tom Riddle, Young & Boles 3 ... dry
Louis May, Boles & Anthony 2 ... dry
Johnson, Trasher-Shouse & Brenner 1 dry
Wm. Salmon, Young & Hupp 1 ... dry

Wells completed ... 7
Production ... 87
Dry ... 4

HANCOCK COUNTY
Pellville—J. W. Purcell, S. H. Russell & Co. 1 ... 5
Dr. Burke, Doug Bolling 1 ... dry

Wells completed ... 2
Production ... 5
Dry ... 1

McLEAN COUNTY
Calhoun—L. E. King, S. A. Cobb & Co. 4 12
Joe Yeiser, Miller, Damron & Co. 4 ... 6

Wells completed ... 2
Production ... 15

HART COUNTY
Logsdon Valley—Grover Jaggers, Hupp & Duff 5 ... 75
Grover Jaggers, Hupp & Duff 6 ... 100
Grover Jaggers, Hupp & Duff 7 ... 100
Grover Jaggers, Hupp & Duff 8 ... 100
Grover Jaggers, Hupp & Duff 9 ... 100
Grover Jaggers, Hupp & Duff 10 ... 100
Grover Jaggers, Hupp & Dufft 11 ... 100
Grover Jaggers, Hupp & Duff 12 ... 100
W. T. Spencer, Hupp & Duff 3 ... 80
Mrs. L. C. Johnson, H. C. Smith Co. 1. dry
E. E. Gibson, unknown parties 1 ... gas
Maggie Finley, unknown parties 1 ... 100
Seymour School lot, unknown parties 1 50
Big Bottom, unknown parties 1 ... dry

Wells completed ... 14
Production ... 1005
Dry ... 2
Gas ... 1

CHRISTIAN COUNTY
Hopkinsville—Geo. D. Davis, Baker, Hickman & Co. 2 ... gas
Crofton, Chas. H. Young & Co. 1 ... gas

Wells completed ... 2
Gas ... 2

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Huntington	1	0	0	1	0	0	0
Gibson	2	150	0	1	0	2	2
Pike	3	0	1	2	0	4	4
Daviess	1	0	1	0	0	7	7
Warrick	0	0	0	0	0	1	1
Sullivan	0	0	0	0	0	4	4
Spencer	2	30	0	0	0	5	5
Knox	0	0	0	0	0	5	5
Perry	1	0	1	0	0	5	5
Marshall	0	0	0	0	1	1	2
Lagrange	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Posey	0	0	0	0	0	1	1
Laporte	0	0	0	0	0	1	1
Hamilton	0	0	0	0	0	2	2
Shelby	0	0	0	0	0	1	1
Dearborn	0	0	0	0	0	1	1
Dubois	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	3	3
Crawford	0	0	0	0	1	0	1
Henry	1	0	0	1	0	0	0
Clay	1	0	1	0	0	0	0
Green	0	0	0	0	0	3	3
Switzerland	3	0	0	3	0	2	2
Pulaski	0	0	0	0	0	1	1
St. Joe	0	0	0	0	0	1	1
DeKalb	0	0	0	0	0	1	1
Rush	0	0	0	0	0	2	2
Elkhart	0	0	0	0	1	0	1
Hancock	1	0	0	1	0	0	0
Floyd	0	0	0	0	0	1	1
Fountain	0	0	0	0	0	1	1
Hendricks	1	0	1	0	0	0	0
Orange	0	0	0	0	1	0	1
Total Jan....	17	180	5	9	4	58	62
Total Dec....	15	280	5	5	4	55	59
Difference ..	2	100	0	4	0	3	3

WELLS COMPLETED
HUNTINGTON COUNTY
Jefferson—Chas. Wiley, Bert Dennison 1 gas
GIBSON COUNTY
Columbia—Ralph Oynett, Wabash Public Serv. Corp. 3 ... gas
Washington—Lottie Hope, Big Four Oil & Gas 1 ... 150

Wells completed ... 2
Production ... 150
Gas ... 1

PIKE COUNTY
Washington—Walter Smith, A. Vern Burden & Co. 1 ... dry
Aaron George, C. C. Taliaferro, Jr., 6. gas
Harley Craig, H. A. Moore & Co. 3 ... gas
Madison—J. O. Sutton, Ohio Oil 2 ... abd

Wells completed ... 3
Dry ... 1
Gas ... 2
Abandoned ... 1

DAVIESS COUNTY
Harrison—Home Bldg. & Loan, Ben D. Ruble 1 ... dry
SPENCER COUNTY
Huff—Mary Berg, Santa Fe Oil 4 ... 20
Wm. Grass, I. A. Polhamus 3 ... 10

Wells completed ... 2
Production ... 30

PERRY COUNTY
Clark—Jerome Cassidy, Fred Comyers & Co. 1 ... dry
HENRY COUNTY
Fall Creek—J. F. McCormick, Delph & Chew 1 ... gas

CLAY COUNTY
Dick Johnson—St. Louis Joint Stock Bank, Ohio Oil 1 ... dry
SWITZERLAND COUNTY
Clark—Jos. Kreimmel, F. C. Bakes & Co. 1 ... gas
Ira & Davis Wiseman, F. C. Bakes & Co. 1 ... gas
Craig—Lawrence Cooper, F. C. Bakes & Co. 1 ... gas

Wells completed ... 3
Gas ... 3

HANCOCK COUNTY
Charlottstown—C. E. Ramsey, Knightstown Nat. Gas 5 ... gas
HENDRICKS COUNTY
Liberty—T. A. Reitzel, French Dev. Co. 1 ... dry

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Muskegon	2	0	1	1	0	1	1
Isabella	2	35	0	1	16	28	44
Midland	2	1,000	1	0	11	20	31
Clare	1	0	0	1	3	1	4
Mecosta	0	0	0	0	1	0	1
Lake	0	0	0	0	0	2	2
Cass	0	0	0	0	0	2	2
Kent	0	0	0	0	1	2	3
Monroe	0	0	0	0	1	1	2
Oceana	0	0	0	0	1	5	6
Emmett	0	0	0	0	0	1	1
Eaton	0	0	0	0	1	0	1
Kalkasky	0	0	0	0	1	1	2
Iosco	0	0	0	0	2	0	2
Ottawa	0	0	0	0	1	1	2
Lenawee	0	0	0	0	0	1	1
Washtenaw	0	0	0	0	0	1	1
Ogemaw	0	0	0	0	0	1	1
Delta	0	0	0	0	1	0	1
Montmorency	0	0	0	0	3	0	3
Van Buren	0	0	0	0	0	2	2
Sanilac	0	0	0	0	3	0	3
Leelanau	0	0	0	0	1	0	1
Gratiot	0	0	0	0	2	0	2
Shiawassee	0	0	0	0	2	2	4
Allegan	2	0	0	2	0	4	4
Livingston	0	0	0	0	1	1	2
Osceola	0	0	0	0	2	0	2
St. Clair	0	0	0	0	1	0	1
Alpena	0	0	0	0	1	0	1
Cheyboygan	0	0	0	0	0	1	1
Kalamazoo	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Oakland	0	0	0	0	0	1	1
Macomb	0	0	0	0	0	1	1
Saginaw	0	0	0	0	1	0	1
Gennessee	0	0	0	0	1	0	1
St. Joseph	0	0	0	0	1	0	1
Total Jan....	9	1,035	2	5	59	82	141
Total Feb....	15	2,950	6	1	66	88	154
Difference...	6	1,915	4	4	7	6	13

WELLS COMPLETED
MUSKEGON COUNTY
Muskegon—Torrent, Arrow Pet. 2 ... gas
White River—A. Runsel, H. C. Nelson 1 dry

Wells completed ... 2
Dry ... 1
Gas ... 1

ISABELLA COUNTY
Chippewa—Keeler-McClintic, Leonard Oil & Gas 9 ... 35
Broomfield—S. E. Willie, Pure Oil 4 ... gas

Wells completed ... 2
Production ... 35
Gas ... 1

MIDLAND COUNTY
Greendale—Cunningham, Geneva Dev. 1 dry
Frank Adams, Talbot Oil 3 ... 1000

Wells completed ... 2
Production ... 1000
Dry ... 1

CLARE COUNTY
Grant—J. A. Bicknell, James A. McKay 2 ... gas
ALLEGAN COUNTY
Allegan—John Tobi, H. P. Manion 1, 2 . gas

Wells completed ... 2
Gas ... 2

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	0	0	0	0	0	2	2
Coles	0	0	0	0	0	1	1
Edgar	0	0	0	0	0	1	1
Crawford	2	3	0	0	1	2	3
Lawrence	1	0	1	0	0	0	0
St. Clair	0	0	0	0	0	2	2
Monroe	1	0	1	0	0	2	2
Randolph	0	0	0	0	0	2	2
Washington	0	0	0	0	0	1	1
Boone	0	0	0	0	0	1	1
Madison	0	0	0	0	0	2	2
Jefferson	0	0	0	0	0	1	1
Jasper	0	0	0	0	0	1	1
Bond	1	0	0	1	0	0	0
Montgomery	1	0	1	0	0	0	0
Total Jan....	6	3	3	1	1	18	19
Total Dec....	0	0	0	0	1	20	21
Difference ..	6	3	3	1	0	2	2

WELLS COMPLETED
CRAWFORD COUNTY
Prairie—L. E. Wilbert, Watson & Co. 3. 2
Wm. Akeman No. 2, O. R. Oil & Gas 8 1

Wells completed ... 2
Production ... 3

LAWRENCE COUNTY
Dennison—E. J. Seed, Big Four Oil & Gas 26 ... dry
Petty—Albert Westall 74-A, Ohio Oil 4. abd
S. E. Hazel, Ohio Oil 27, 39 ... abd
Minnie Wright, Ohio Oil 4 ... abd
Nancy Updike, Ohio Oil 17, 21 ... abd
S. S. Updike, Ohio Oil 7 ... abd
R. M. Hardacre No. 1, Ohio Oil 1, 7 .. abd
Dora A. Hipshire, Ohio Oil 2 ... abd
Wm. Applegate, Ohio Oil 4, 8, 10 .... abd
L. B. Nuttall, Ohio Oil 3 ... abd
Oris Pepple, Ohio Oil 9, 11, 12 ... abd
J. F. Klinger, Ohio Oil 7, 8 ... abd
Bridgeport—H. C. Thorn, Ohio Oil 41 .. abd

Wells completed ... 1
Dry ... 1
Abandoned ... 20

ST. CLAIR COUNTY
Sugar Loaf—Earl Proffer, C. Roques & Co. 2 ... abd
MONROE COUNTY
Columbia—G. Harmes, Webster Oil & Gas 1 ... dry
WABASH COUNTY
Wabash—Edwin Smith, Ohio Oil 2, 4 .. abd
BOND COUNTY
Lagrange—R. Snell, Bond County Gas 1 gas
MONTGOMERY COUNTY
Irving—John King, Stewart DeWitt & Co. 1 ... dry

TEXAS GULF PRODUCING COMPANY IS ORGANIZED

HOUSTON, Tex., Feb. 15.—Details of the organization of the Texas Gulf Producing Co., recently organized to take over the properties of the Nat Hunter Producing Co., were made known in a statement issued by the company. The company, chartered under the laws of Delaware, is headed by O. R. Seagraves as chairman of the board; N. W. Hunter, president; Henry M. Brown, vice president and treasurer; Frank R. Williams, vice president, and Doyle Smith, secretary. Other members of the directorate are William F. Morgan, William L. Moody, 3d, and S. A. Judson, who also is chief geologist.

Holdings of the company include the properties of the Nat Hunter Producing Co. in East Texas, as well as those properties recently acquired by that company from the Humphreys Corp., the latter being chiefly at Barbers Hill. The combined value of these properties has been placed by engineers at $11,087,773. Additional property includes approximately 5,000 acres in 12 counties of Texas, in which is a 530-acre tract at Bryan Mound Dome, Brazoria County, Texas, and also leases in Franklin County, Mississippi.

In East Texas the company owns a full working interest in 71.99 acres and a half interest in 63.22 acres, located in the northwestern part of Rusk County. All is in proved territory with 11 flowing wells. At Barbers Hill the company owns a full working interest in 561.2 acres and a partial working interest in 17 additional acres. At the time the statement was made there were 29 producing wells with tests drilling.

PLAN TEST FOR OIL IN GEORGIAN BAY

A definite test of the oil possibilities of Manitoulin Island in Georgian Bay has been undertaken by Senator Poirier and associates, who have let a contract to A. E. Randall of Petrolia to drill four tests. Some 15 tons of drilling equipment was unloaded recently at Little Current, and No. 1 test is reported under way. No. 1 location is on acreage between Manitowaning and Ten Mile Point.

Oil indications have been known to exist in Manitoulin Island since the time of the early Petrolia discoveries. One pioneer test was drilled by Joseph Ward of Petrolia. About the year 1899 A. E. Randall put down some tests at Wikwemikog. In 1913 Senator Poirier and associates interested themselves in the field and some further drilling was done. In most of the tests drilled at various times oil showings were encountered, apparently in the Trenton limestone; and in some wells a fair commercial production was indicated which, however, failed to hold up. The early drilling was fairly close to the Trenton outcrops, and it was claimed by geologists that in other parts of the island, where the Trenton was more deeply covered, the prospects of commercial production would be better.

Attention was redirected to the field recently when oil was discovered in a school well drilled by R. O. Watson near Sandfield, about 14 miles from Manitowaning. In this well the drill went through 60 feet of limestone and apparently encountered oil before it reached the water vein.

Demand for Petroleum Products in Colombia Declining Since 1929

The demand for petroleum products in Colombia, supplied locally since 1926 from the refinery of the Tropical Oil Co. at Barranca Bermeja, reached a peak in 1929 and subsequently has been on a decline, according to the statistical tables published in the latest issue of the Boletin de Minas y Petroleo of the Colombian Department of Industries.

With a rated daily capacity of 7,000 bbls., the refinery operated at 65 per cent of its capacity during 1929, when a daily average of approximately 4,600 bbls. was refined and at approximately 50 per cent of its capacity during 1930 and the first half of 1931, when daily erude runs were slightly under 3,500 bbls. The annual crude runs officially reported are: 1926, 737,101 bbls.; 1927, 1,206,496 bbls.; 1928, 1,475,642 bbls.; 1929, 1,667,761 bbls.; 1930, 1,230,034 bbls.; and the first half of 1931, 627,559 bbls.

Gasoline production during the period of operation has averaged approximately 20 per cent of the crude run. The crude, which is obtained from the Infantas Field, about 18 miles distant from the refinery, is said in published reports to be somewhat similar to the lighter crudes of the San Joaquin Valley of California, averaging slightly under 30° A.P.I. Gasoline shipments during the period are reported as follows: 1926, 130,393 bbls.; 1927, 215,555 bbls.; 1928, 262,318 bbls.; 1929, 339,485 bbls.; 1930, 285,124 bbls.; and the first half of 1931, 126,776 bbls. Kerosene shipments during the period ranged between 50,000 bbls. and 65,000 bbls. annually.

The output of fuel oil during the period averaged approximately 72 per cent of the crude run. The major portion of the fuel oil production, or from 50 to 70 per cent, was used in oil company operations, either in the field or at the refinery. Deliveries to steamers operating on the Magdalena River have approximated 250,000 bbls. annually. Fuel oil production during the period of operation is reported as follows: 1926, 532,232 bbls.; 1927, 893,135 bbls.; 1928, 1,113,921 bbls.; 1929, 1,226,417 bbls.; 1930, 818,663 bbls.; and the first half of 1931, 432,119 bbls.

Gas oil production totals 121,538 bbls. during the period, ranging between 20,000 and 25,000 bbls. yearly. The production of absorption oil was first reported in 1929, with an output of 2,429 bbls.; 1930, 16,385 bbls.; and the first half of 1931, 3,682 bbls. Beginning in 1930, lubricating oils were produced, the output for that year being 17,024 bbls., while, during the first half of 1931, 20,051 bbls. were produced. The first production of petroleum asphalt, 270 bbls., was reported for the first half of 1931. The production of 2,080 bbls. of Ethyl Gasoline was reported for 1929, 3,383 bbls. for 1930, and 2,403 bbls. during the first half of 1931.

DEEP OIL ELECTION

WICHITA FALLS, Tex., Feb. 15.—At the annual meeting of the Deep Oil Development Co., the following board of directors was elected: Frank Kell, Harry Hines, J. J. Perkins, John Hirschi, James E. McKanna, W. M. McGregor, J. S. Bridwell, J. T. Harrell, J. F. O'Donohoe, W. B. Hamilton, N. H. Martin, W. L. Hodges, Iowa Park; A. T. McDannald, Electra; O. T. Anderson, Olney; S. G. Helms, Dundee; Dr. A. B. Edwards, Henrietta; Sam Householder, Byers; L. H. Cullum, Roy B. Jones, T. B. Wilson of Archer City.

The new board will meet in the near future, when the officers will be elected.

TO PRODUCE POTASH

The Texas Potash Corp. is contemplating the production of potash on leases held by the company 26 miles southwest of Midland in Midland County, Texas. Work on the shaft is to start soon.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Report for Month of December

RUNS

	Month bbls.	Daily av. bbls.
Prairie P. L. Co.*	697,500	22,500
Gulf P. L. Co.	1,965,109	63,391
Texas P. L. Co.	748,985	24,161
Magnolia P. L. Co.	1,734,760	55,960
Empire P. L. Co.	2,468,143	79,618
Cosden P. L. Co.	682,211	22,007
Stanolind P. L. Co.*	3,193,000	103,000
Oklahoma P. L. Co.	2,316,497	74,726
Other lines*	5,990,750	193,250
Total December	19,796,955	638,611
Total November	19,562,416	652,080
Difference	234,539	13,469

SHIPMENTS

Prairie P. L. Co.	2,382,895	76,868
Gulf P. L. Co.	2,047,205	66,039
Texas P. L. Co.	584,385	18,851
Magnolia P. L. Co.	1,290,374	41,625
Empire P. L. Co.	1,515,327	48,882
Cosden P. L. Co.	802,576	25,890
Stanolind P. L. Co.	3,557,622	114,762
Oklahoma P. L. Co.	2,400,708	77,442
Other lines*	4,774,000	154,000
Total December	19,355,129	624,359
Total November	19,329,044	660,985
Difference	473,915	36,626

STOCKS

	Bbls.
Prairie O. & G. Co.*	35,211,000
Gulf P. L.-Gypsy Oil Co.	7,988,137
The Texas Company	3,325,694
Magnolia Petroleum Co.	7,779,567
Empire P. L. Co.	4,539,501
Mid-Continent Pet. Corp.	3,332,588
Stanolind Crude Oil Pur. Co.*	16,583,000
Oklahoma P. L. Co.	1,302,734
Carter Oil Co.	6,494,184
Other lines*	15,463,000
Total December	102,072,255
Total November	100,026,383
Difference	2,046,872

*Estimated.

EASTERN PIPE LINE REPORT FOR MONTH OF DECEMBER

Runs From Wells

In the following tables will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for November and December:

	Nov.,'31	Dec.,'31
Nat. Transit	124,750.97	134,728.53
S. W. Pa. P. L.	74,098.69	78,639.10
Eureka P. L.	283,984.98	304,834.50
Buckeye P. L. (Macksburg)	257,058.99	276,673.59
Buckeye P. L. (Cleveland)	12,136.62	12,125.02
Buckeye P. L. Lima, etc.	66,302.98	77,185.73
Indiana P. L.	2,833.35	2,581.64
N. Y. Transit	37,877.10	42,593.82
Tide Water P. L.	23,526.84	24,880.76
Pure Oil	294,109.73	350,431.59
Stoll Oil Ref.	77,377.78	36,806.03
Bradford Trans.	396,444.21	422,865.63
Ashland Ref.	144,095.48	152,539.88
Total	1,794,597.72	1,916,885.82
Daily average	59,819.92	61,835.03

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December.

	Nov.,'31	Dec.,'31
Nat. Transit	555,055.73	554,540.59
S. W. Pa. P. L.	353,585.86	426,018.53
Eureka P. L.	270,980.17	318,074.34
Buckeye P. L. (Macksburg)	228,320.83	233,257.65
Buckeye P. L. (Cleveland)	1,715.98	1,709.74
Buckeye P. L. (Lima, etc.)	1,702,425.58	1,578,295.69
Indiana P. L.	754,554.80	738,240.58
Southern P. L.	70,467.39	61,182.44
N. Y. Transit	192,296.27	176,524.14
Northern P. L.	151,356.84	134,129.64
Tide Water P. L.	424,477.09	272,801.01
Pure Oil	394,500.51	190,150.36
Bradford Trans.	413,554.01	448,372.68
Tuscarora	266,328.33	330,472.61
Ashland Ref.	112,626.92	
Total	5,892,757.31	5,463,472.00
Daily average	196,425.26	176,241.03

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of November and December:

	Nov.,'31	Dec.,'31
Nat. Transit	695,594.17	647,268.73
S. W. Pa. P. L.	415,253.99	434,609.86
Eureka P. L.	1,207,018.46	1,205,561.50
Buckeye P. L. (Macksburg)	284,220.29	298,989.13
Buckeye P. L. (Cleveland)	46,414.61	45,407.41
Buckeye P. L. (Lima, etc.)	2,616,930.98	2,890,304.17
Indiana P. L.	561,296.24	543,883.39
Cumberland P. L.	64,408.44	64,500.81
Southern P. L.	183,750.86	229,411.72
N. Y. Transit	111,520.13	145,567.39
Northern P. L.	328,199.83	314,690.06
Tide Water P. L.	941,847.74	1,107,832.07
Pure Oil	481,451.24	803,723.79
Tuscarora	11,135.10	10,793.98
Brad. Trans.	328,694.79	326,488.02
Ashland Ref.	552,649.50	
Total	8,830,386.37	9,119,032.53
Increase	412,681.46	288,646.16

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of November and December, showing gross stocks of the above fields:

	Nov.,'31	Dec.,'31
Pennsylvania	2,961,620.08	3,289,870.05
Lima	602,227.52	598,134.96
Kentucky	627,465.45	74,898.32
Mid-Continent	4,143,909.75	4,422,734.01
Illinois	23,229.59	
Michigan	471,933.98	733,395.19
Total	8,830,386.37	9,119,032.53

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
Jan.	52,904	51,749	75,907	53,939
Feb.	57,092	51,833	79,256	55,163
Mar.	57,485	54,252	76,688	54,331
April	56,812	58,444	84,536	54,914
May	62,057	59,902	70,546	53,344
June	58,230	58,332	76,430	54,110
July	57,144	66,087	48,921	50,723
Aug.	57,745	66,087	54,291	51,503
Sept.	53,487	67,315	56,595	51,345
Oct.	58,100	76,093	58,179	54,595
Nov.	53,865	74,831	52,332	59,319
Dec.	52,025	74,561	53,999	61,825

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
Jan.	146,465	165,721	217,623	175,369
Feb.	167,368	159,387	224,355	182,494
Mar.	155,833	161,474	228,846	189,508
April	172,935	169,737	241,845	191,460
May	180,559	184,281	248,383	199,247
June	188,024	185,404	234,401	221,155
July	189,470	194,763	207,094	211,632
Aug.	192,853	194,946	205,506	224,166
Sept.	194,138	201,214	193,999	217,537
Oct.	176,000	191,367	157,675	210,831
Nov.	176,898	202,743	146,628	196,425
Dec.	173,572	186,257	143,001	176,241

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
Jan.	7,596,564	12,220,045	11,831,093
Feb.	8,738,835	12,991,561	11,506,489
Mar.	9,002,058	13,347,217	11,012,162
April	8,978,172	13,233,961	11,044,487
May	8,903,560	13,052,953	10,728,239
June	8,921,275	13,396,855	9,902,349
July	9,211,565	13,368,562	9,569,849
Aug.	9,440,643	13,047,051	9,192,457
Sept.	9,443,067	12,812,018	8,492,431
Oct.	9,441,101	12,437,553	8,417,694
Nov.	9,868,538	11,851,380	8,830,386
Dec.	11,253,953	11,751,952	9,119,032

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks Jan. 1	440,110.91
Runs from wells	490,830.53
Other receipts	303.50
Regular deliveries	263,402.75
Other deliveries	207,408.59

The amount of Illinois oil run by the Tide Water Pipe Co. in December was 24,880.76 bbls. Deliveries were 43,220.44 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1931	Runs	Deliveries
December	515,771.28	306,623.19
1930		
January	543,387.95	498,293.93
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	630,074.22	509,304.60
May	605,147.37	504,069.34
June	572,662.57	468,658.81
July	604,529.54	388,454.47
August	594,642.12	375,742.43
September	457,001.11	371,691.62
October	478,442.12	320,688.73
November	422,794.68	355,403.12
December	556,418.78	363,719.55
1931		
January	468,429.04	469,573.19
February	429,284.54	461,262.85
March	424,638.33	356,663.26
April	421,814.98	282,532.65
May	423,231.80	322,513.95
June	510,305.78	320,258.13
July	520,009.38	289,219.05
August	476,423.56	393,231.08
September	492,183.83	322,012.50
October	498,124.12	325,834.95
November	470,302.63	251,558.48

Tide Water Pipe Co., Ltd., also delivered in December, 102,199.72 bbls., Oklahoma oil

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1931—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
January	17,613	13,519	154,225	32,902	30,612	248,871	2,032	11,677	2,097	3,097	18,903	267,774
February	31,321	16,929	127,786	31,714	26,857	234,607	4,536	11,571	.....	536	16,643	251,250
March	27,645	18,935	141,160	26,290	21,129	238,161	4,065	2,580	.....	1,968	8,613	246,774
April	35,000	10,533	105,000	29,767	35,533	215,833	2,783	2,400	.....	.....	6,133	221,966
May	30,129	8,774	107,000	25,452	26,710	198,065	.....	2,000	.....	.....	2,000	200,065
June	30,067	10,833	111,767	27,000	20,833	200,500	3,300	5,500	2,167	1,333	12,300	212,800
July	26,387	11,226	104,678	29,323	21,773	193,387	6,903	7,419	4,194	.....	18,516	211,903
August	32,613	15,581	91,742	22,387	25,741	188,064	4,161	2,516	.....	3,162	9,839	197,903
September	27,067	7,267	106,867	20,099	22,967	184,267	4,833	8,333	.....	.....	13,166	197,433
October	53,710	14,484	100,774	26,742	40,645	236,355	6,097	6,871	2,097	1,838	16,903	253,258
November	48,033	28,800	51,667	28,600	12,967	170,067	3,933	10,833	3,033	1,367	19,166	189,233
December	20,258	16,806	121,807	31,645	34,258	224,774	1,968	4,355	.....	.....	6,323	231,097

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1931—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
January	8,387	6,613	21,968	14,678	11,096	62,742	.....	.....	.....	.....	6,129	68,871
February	5,787	2,713	29,143	4,000	5,750	47,393	.....	.....	.....	.....	3,750	51,143
March	10,032	1,611	21,388	7,324	8,774	49,129	.....	.....	.....	.....	6,355	55,484
April	5,133	.....	19,200	16,500	10,067	50,900	.....	.....	.....	.....	4,000	54,900
May	4,452	3,064	19,903	11,226	6,258	44,902	.....	.....	.....	.....	2,355	47,258
June	4,267	.....	25,100	6,333	3,500	39,200	.....	.....	.....	.....	.....	39,200
July	6,774	1,194	24,612	11,065	9,902	53,548	.....	.....	.....	.....	1,335	54,903
August	3,452	.....	16,419	7,419	4,290	31,580	.....	.....	.....	.....	968	32,548
September	4,267	3,667	12,933	4,699	7,367	32,933	.....	.....	.....	.....	4,000	36,933
October	2,355	1,129	19,290	16,709	9,323	48,806	.....	.....	.....	.....	3,323	52,129
November	1,000	.....	22,800	11,567	.....	35,367	.....	.....	.....	.....	3,366	38,733
December	3,161	.....	22,484	8,839	6,032	40,516	.....	.....	.....	.....	7,742	48,258

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1931—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
January:	Month	16,485,738	14,550,953	20,019,312	3,432,475	1,574,955	2,135,027	2,966,142	3,274,000	64,438,613
	Daily average	531,798	479,063	645,781	110,725	50,805	68,872	95,682	2,091,565	
February:	Month	14,930,932	13,521,920	18,957,571	3,341,016	1,402,492	1,931,616	2,747,024	3,120,000	60,021,631
	Daily average	533,248	483,285	677,057	119,322	50,089	70,772	98,108	111,750	2,143,629
March:	Month	16,364,842	16,827,687	22,453,619	3,498,598	1,469,245	2,061,676	2,898,035	3,374,000	68,747,602
	Daily average	527,898	536,377	734,310	112,858	47,395	66,502	93,485	108,839	2,217,665
April:	Month	15,803,541	16,815,990	26,887,717	3,321,830	1,412,220	2,008,021	2,901,870	3,273,000	72,284,239
	Daily average	526,785	559,255	896,257	109,396	47,074	66,924	96,729	109,100	2,412,808
May:	Month	16,448,960	17,333,867	28,708,684	3,341,366	1,446,274	2,232,563	3,093,419	3,190,000	75,800,138
	Daily average	530,612	559,157	926,086	107,786	46,654	72,018	99,949	102,900	2,445,166
June:	Month	15,641,436	16,678,200	29,139,833	3,175,440	1,344,450	1,850,511	2,986,200	3,166,000	73,982,070
	Daily average	521,381	555,940	971,327	105,848	44,815	61,684	99,540	105,533	2,466,069
July:	Month	16,093,332	16,420,080	33,827,213	3,059,832	1,287,585	1,715,730	2,905,909	3,341,000	78,680,671
	Daily average	519,139	529,680	1,091,200	99,672	41,535	55,345	93,739	107,774	2,538,073
August:	Month	15,668,984	9,517,279	32,279,816	3,141,323	1,165,569	1,584,444	2,807,143	3,167,000	69,331,558
	Daily average	505,451	307,009	1,041,284	101,333	37,599	51,111	90,553	102,161	2,236,502
September:	Month	15,180,610	7,946,880	28,981,525	3,147,030	1,128,380	1,541,384	2,761,230	3,622,000	64,429,039
	Daily average	506,020	264,896	966,051	104,901	37,946	54,713	92,041	121,067	2,180,968
October:	Month	15,651,983	13,951,893	30,725,173	3,177,046	1,172,389	1,822,355	2,797,597	3,900,000	73,198,356
	Daily average	504,903	417,803	991,134	102,486	37,819	58,782	90,247	125,807	2,328,979
November:	Month	14,997,700	16,430,730	28,860,561	3,131,670	1,130,700	1,851,577	2,706,390	3,629,000	72,748,328
	Daily average	499,923	547,691	962,018	104,389	37,690	61,719	90,213	121,300	2,424,944
December:	Month	15,560,984	16,598,299	27,767,651	3,198,642	1,082,148	1,971,817	2,816,759	3,445,000	72,441,300
	Daily average	501,967	535,429	903,860	103,182	34,908	63,607	90,863	117,581	2,343,365
Total 12 months		188,833,032	175,703,848	328,608,575	38,956,328	15,626,407	22,856,636	34,392,718	40,230,000	845,208,454
Daily average		517,340	481,370	900,297	106,730	42,812	62,621	94,227	111,863	2,317,370